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Surveillance and Validation of Self-Reported Sexual Behaviours of Secondary School Students in the Kabarole District ofWestern Uganda.

by

Lise Hélène O'Connor ©

A thesis submitted to the Faculty of Graduate Studies and Research in partial fulfillment of the requirements of the degree of Master of Science

In

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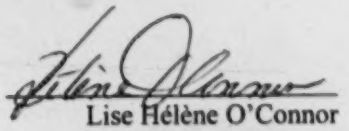

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The undersigned certify that they have read, and recommend to the Faculty of Graduate Studies and Research for acceptance, a thesis entitled *Surveillance and Validation of Self-Reported Sexual Behaviours of Secondary School Students in the Kabarole District of Western Uganda* submitted by Lise Hélène O'Connor in partial fulfillment of the requirements for the degree of Master of Science in Medical Sciences – Public Health Sciences.

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I wish to dedicate this thesis to my parents, Keith and Louise O'Connor.
Je n'aurais pas pu réaliser ce projet sans votre aide, vos conseilles et votre encouragement. Merci.

Abstract

The present study's main objective was to assess the validity and reliability of self-reported sexual behaviours of secondary school students in the Kabarole District, Uganda. The validated trends could then be used to explain the decreasing HIV-prevalence within pregnant women aged 15 to 19 years, from the Kabarole District.

The test-retest method was used to measure the reliability of responses. Focus group discussions were conducted to obtain feedback on the survey instrument and research design, as well as to validate the questionnaire findings by means of data triangulation.

The questionnaire was found to be an effective tool of obtaining reliable and generally valid information on the sexual behaviours of this population. The trends in sexual behaviours observed over the past four years were confirmed, indicating that the drop in HIV-prevalence among this age group is probably due to increased condom use.

The present study re-emphasizes the importance of validating information on self-reported sexual behaviours, and identifies potential threats to validity as well as the strengths and limitations of the methods used within this study to assess validity and reliability.

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List of Abbreviations

ACP	AIDS Control Program
AIDS	Acquired Immune-Deficiency Syndrome
ADF	Allied Democratic Force (rebel group)
ANC	Ante-natal Care
ARRM	AIDS Risk Reduction Model
DRC	Democratic Republic of Congo
DEO	District Education Officer
FGD	Focus Group Discussion
GPA	Global Programme on AIDS
GVS	German Volunteer Service
HIV	Human Immuno-deficiency Virus
LRA	Lord's Resistance Army (rebel group)
MFEP	Ministry of Finance and Economic Planning
MOH	Ministry of Health
NRM	National Resistance Movement
STD	Sexually Transmitted Disease
UNAIDS	Joint United Nations Programme on HIV/AIDS
UPE	Universal Primary Education
WHO	World Health Organization

Chapter 1: Introduction

The Joint United Nations Programme on HIV/AIDS estimates that there are currently over 33 million people living with HIV world-wide, 90% of whom are in the developing world (Joint United Nations Programme on HIV/AIDS [UNAIDS], 1999). In sub-Saharan Africa, where 13.3 million adults are infected with HIV (UNAIDS, 1997), the gains in survival made by many countries are threatened by the impact of HIV infection (World Health Organization [WHO], 1998) and AIDS has become much more than just a medical phenomenon. Young people between the ages of 15 and 24 make up one third of all the HIV cases in the world, and around one half of all new HIV infections occur in individuals within this age range (UNAIDS, 1999). In light of the absence of any medical cure for AIDS, prevention remains the only method of controlling the epidemic.

Effective prevention of the disease depends on researchers and policy makers having a thorough and contextual understanding not only of the changing trends of the epidemic, but also of the behavioural, social and cultural factors mitigating those changes. To quote Schopper et al. (1993: p.401):

> More and better information on sexual behaviour in defined communities is thus urgently needed, in order to determine the link between HIV prevalence and sexual behaviour, to design effective interventions, and to evaluate their impact.

The present study looks at linking HIV prevalence and sexual behaviour data among adolescents from the Kabarole District of Western Uganda in order to

explain the falling HIV prevalence among adolescents between that ages of 15 and 19 years, in this district. Before making this link, however, researchers must be certain that the information on sexual behaviours is valid and gives an accurate picture of adolescent sexual behaviours.

Study Objectives

The present study's principle objective was to assess the validity of the findings from the 1998 self-administered questionnaires completed by a randomly selected sample of secondary school students in the Kabarole district of Uganda. The questionnaire is part of the Basic Health Service's (BHS) behavioural surveillance program, and has been administered annually since 1994. The results of the validation study will enable the BHS team to assess whether the questionnaire should continue to be used to monitor sexual behaviours of secondary school students, as well as if and how it should be modified in order to obtain more accurate results.

The validity of the results and trends reported by the questionnaire over the past years were assessed based on the reliability of the survey instrument. By using a multi-method approach to validation, framed within the AIDS Risk Reduction Model (ARRM), this study also sought to elaborate on the questionnaire's findings. A more contextual picture of the sexual behaviours of

secondary school students, as well as of what behaviours have changed, and the context in which these changes have taken place was thereby provided.

The present study also sought to contribute to the development and improvement of approaches and techniques in validity and reliability studies for self-reported behaviours. Finally, this study looked at developing more effective and culturally sensitive methods of collecting information on sexual behaviours.

Rationale

Through the validation of the research instrument, the accuracy of the trends in sexual behaviours of secondary school students, reported by the questionnaire findings since 1994, is assessed. The findings of the validity assessment assisted in guiding the linking of the behavioural information with sentinel surveillance data of trends in HIV prevalence in order to obtain a better understanding of the epidemic in this region.

Research Questions

- Is the survey instrument (the questionnaire) a reliable, valid and appropriate research tool to obtain accurate self-reported behaviours from secondary school students in the Kabarole District?

- Are the findings and trends of the questionnaire an accurate representation of sexual behaviours of secondary school students in the Kabarole District?

- Do the trends in the sexual behaviours of secondary school students explain trends in HIV prevalence for people in this age group?

Chapter 2: Background

Country Description

Overview

The Republic of Uganda is a land locked country set in the Western Rift Valley, in the heart of East Africa. It lies on the equator and shares its borders with Kenya, Sudan, Congo, Rwanda and Burundi (see Map of Africa, Appendix A). According to the World Health Organization, Uganda had a population of 20.791 million in 1997, with an average annual growth rate of 2.8% (WHO, 1998) and with 47% of the population under 15 years of age (Population Reference Bureau, 1998). Ugandans have a life expectancy of 41 years, an infant mortality rate of 114 (per thousand live births), a 61.8% adult literacy rate, and a total fertility rate of 7.1 (WHO, 1998).

Uganda's economy relies primarily on agriculture, the main source of income for well over 90% of the adult population. The two most important cash crops for export are coffee and cotton, with tea and sugar also being grown for export (Ofkansky, 1996).

The Kabarole District – Study Setting

The Kabarole District, where this study is set, is one of the 39 administrative districts making up Uganda. It is located in the South West region of Uganda, close to the Democratic Republic of Congo border (see Map of

Uganda, Appendix B). According to the 1991 census, the district has a population of 771,440 and a population growth rate of 3.3%, slightly above the national rate (Ministry of Finance and Economic Planning, [MFEP], 1991). Kabarole has a total fertility rate of 8.03 and a total literacy rate of 49% (MFEP, 1991). The district headquarters are in Fort Portal, a small town located about 300 km from the capital city, Kampala, and set in the foothills of the Rwenzori Mountains. The district is home to the Batoro people, and the main languages spoken are English and Rutoro. The district relies mainly on the coffee and tea processing industries, in addition to the subsistence farming and fishing in which most people are involved.

History

Uganda was established as a British protectorate in 1894, and obtained its independence from British rule on October 9th, 1962. The political strife immediately preceding independence transformed Uganda into an unstable state ruled by a series of military dictatorships. Names like Milton Obote, Idi Amin and Tito Okello became synonymous in the international community with tyranny, abuse of power, and atrocious violations of human rights.

The period of civil and military unrest between 1971 and 1985 resulted in the destruction of Uganda's economic and social infrastructure. The nationalisation or expropriation of all foreign businesses (mostly owned by Asians), and the expulsion of Asians from Uganda had a serious impact on the

country's economic growth. This, in turn, seriously impeded the government's ability to provide essential social services such as education and health care.

In January of 1986, the National Resistance Movement (NRM), a popular guerrilla movement launched in 1980 by Yoweri Museveni, entered Kampala and overthrew the military regime of Tito Okello. Backed by the majority of Ugandans, and with the support of the international community, Museveni's National Resistance Movement has re-established peace and stability in Uganda, allowing for the rehabilitation and reconstruction of the country's infrastructure, economy and social systems. In May of 1996 the first ever Presidential and Parliamentary elections were held, with President Museveni and his NRM winning the overwhelming approval of the electorate. Although Uganda does not have a multipartite government system, President Museveni has vowed to hold a national referendum on the issue within the next few years.

While Uganda remains a relatively stable country, there has been an upsurge in terrorism since the early 1990s by rebel groups both in the North and more recently in the South West regions, seeking to overthrow Museveni's government. The rebels in the North are part of the Lord's Resistance Army (LRA), a Christian fundamentalist rebel faction led by former faith healer Joseph Kony. The LRA rebels have become known on the international stage for their abductions of children from villages and schools, forcing them to join rebel troops as servants, wives and soldiers (Human Rights Watch, 1997).

In addition to the rebel activity in the North, the political insurgency in the Democratic Republic of Congo (DRC), which began in August of 1998, has led to an increase in rebel activity in the Western Great Lakes region of Uganda, bordering the DRC. The Allied Democratic Force (ADF) rebels are based in the foothills of the Rwenzori Mountains separating Uganda and the DRC. Attacks and raids on nearby towns and villages throughout the Kasese, Kabarole and Bundibugyo Districts have increased since the beginning of the conflict in the DRC.

The extent of the impact that the escalating Congo conflict and the continued insurgencies in the North will have on Uganda and its people remains to be seen. Hundreds of thousands of people have already been displaced from their homes and villages (Human Rights Watch, 1997). In addition, the Ugandan government has recently stated that a greater portion of its national budget would be allocated to the military and defence - to the detriment of social and health programs - in order to support its ongoing involvement in the conflict.

The People

Although Uganda is an ethnically diverse country, most people are either part of the Southern Bantu-speaking people or Northern Nilotic-speaking people. The Bantu-speakers include the Batoro people who are found predominantly in

the Kabarole District (the setting of this study), as well as the Buganda[1], who are found throughout much of Southern Uganda (Ofcansky, 1996). While there are approximately 32 languages spoken in Uganda, English is the language of official business. Khiswahili is also widely spoken and Luganda is a common language in the south (among the Buganda people). The majority of Ugandans are Christians, with a small minority of Muslims and indigenous religions (Ofcansky, 1996).

The Bantu-speakers are a people based on patrilineal descent, that is where individuals are traditionally associated with their father's clan (Roscoe, 1965; Ofcansky, 1996). Polygamy is a common cultural practice (Roscoe, 1965), with 30% of married Ugandan women indicating that they are in a polygynous union (MFEP, 1995). Culturally, pre-marital sex is frowned upon, particularly for women, and anyone who should bear a child before marriage would be disgraced for life (Roscoe, 1965). Despite this, Uganda has one of the highest teenage pregnancy rates in the world, with 34.1% of women between the ages of 15 and 19 years having had a child (MFEP, 1995). Most women are married by the age of 18 (MFEP, 1995). While it is acceptable, even expected, for men to have sexual partners outside of marriage, women are expected to remain faithful to their husband (Roscoe, 1911; Parkin, 1966).

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[1] The ethnography of the Baganda has been extensively recorded, (Fallers, 1964; Kilbride &Kilbride, 1990; Mair, 1943; Obbo, 1980; Roscoe, 1911, 1966).

Education

Given that this study focuses on the sexual behaviour of secondary school students, a brief overview of the educational system in Uganda is provided. The 1990s have seen Uganda make significant gains in economic growth and development of its social programs. Among its most ambitious initiatives, the newly implemented Universal Primary Education Program (UPE) offers free primary education to four children in every Ugandan family.

Advances in the area of education were evident, however, even prior to UPE. From 1978 to 1994, the number of primary schools in Uganda more than doubled and the number of secondary schools increased from 120 to over 557 (MFEP, 1995). The 1995 Health and Demographic Survey indicates that 68% of those between 6 to 15 years of age are enrolled in school. That number, however, drops off considerably for the 16 to 20 age group; only about 40% of boys are still enrolled in school, and the number falls to below 20% for girls (MFEP, 1995).

Girls are also less likely to go to school than boys, often being forced to stay home to help with the household chores, or are married off at an early age (MFEP, 1995). According to the Ministry of Education, more than 75% of girls drop out before they complete their secondary education. The situation is worse in rural areas, where general enrolment is lower than in urban areas, and where less than 10% of girls go beyond primary seven (MFEP, 1995).

Even with the quantitative increases and advances made in education, the quality of the schools and of the education remains an important issue. Adequate

buildings and facilities for schools are uncommon, with the exception of the more elite boarding schools. Most schools consist of open rooms with mud floors and lack windows, permanent roofs and electricity. As the number of students increases (and will continue to increase with UPE), classrooms are quickly becoming overcrowded and teachers are expected to handle large classes, which in some urban schools can have up to 100 students. To make matters worse, teachers are by and large under-paid and under-qualified for the work expected of them. Approximately 40% of primary school teachers and 39% of secondary school teachers have never received any training in education. This figure rises to 50% in the Kabarole District (World Bank, 1993). The education system in Uganda will be discussed further in the Methods section.

AIDS in Uganda

An Overview

Years of political instability and civil war have crippled Uganda's social and health infrastructure, leaving the country struggling through most of the 80s and 90s to deal with an AIDS epidemic of frightening proportions. Uganda was among one of the first countries to identify 'slim disease'[2] or AIDS, in 1981 (Serwadda et al., 1985). The Ugandan government was also one of the first to

react to the epidemic by establishing, with the help of the WHO, the National AIDS Control Program (ACP), in 1986.

Uganda's ACP is considered one of the most aggressive anti-AIDS campaigns in the world (Ofcansky, 1996). It focuses on health education and behaviour change, condom promotion and distribution, the establishment of a safe blood supply, monitoring the HIV/AIDS epidemic, as well as providing STD treatment and home-based care for people with AIDS. Despite its efforts, the number of AIDS cases in Uganda continued to increase at an alarming rate. By 1991, the reported number of AIDS cases had escalated to 21,179 (ACP, 1990) ranking Uganda second only to the United States for the number of AIDS cases in the world (ACP, 1990). By 1996, there were 51,344 cumulative reported AIDS cases in Uganda (STD/ACP-Ministry of Health, 1997), with an estimated 1.84 million people infected with HIV by 1998 (Kayita et al., 1997).

AIDS has had a devastating impact on individuals, on families and on entire communities in Uganda. It is not only the deep extent with which AIDS has permeated the entire fabric of Ugandan life and society, but how far reaching in scope its impact has been, leaving almost no segment of the population untouched. In a recent population health survey, 85.5% of Ugandan women 15 to 19 years of age and 89.5% of Ugandan men in the same age group reported that

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[2] It was diagnosed as 'slim disease' because of the excessive weight loss that was observed in patients suffering from AIDS (Serwadda et al., 1985).

they knew someone who has died of AIDS (MFEP, 1995). Based on these figures, it is not surprising that almost all of the men and women in the country have heard of AIDS (MFEP, 1995).

It is possible, however, that the time has finally come for Uganda to begin reaping some benefits of its aggressive efforts to control the AIDS epidemic. Significant declines in HIV prevalence have been observed both in urban and rural areas (Kigotho, 1997). Furthermore, decreases in HIV prevalence among pregnant 15-19 and 20-24 year old women have been observed in several areas of the country (Asiimwe-Okiror et al., 1997; Konde-Lule, 1995).

As prevention remains the only cure for AIDS, the influence we have in determining the future course of the epidemic relies essentially on our understanding of all aspects of the disease and of the epidemic. This means having accurate epidemiological surveillance methods tracking the spread of HIV, in conjunction with accurate methods of collecting information on sexual behaviours in order to understand the changing social and behavioural aspects of the epidemic.

Epidemiological surveillance of HIV

Over the last decade, HIV epidemiological surveillance systems have been established by national AIDS programs in several sub-Saharan African countries to obtain information on the prevalence of HIV infection and to monitor trends in HIV prevalence and incidence (Webb, 1997). Sentinel surveillance, which

involves using blood samples already taken for other purposes, is the most commonly used technique of tracking HIV infection in general populations (Webb, 1997). The samples are collected in an unlinked, anonymous way, offering an accurate and cost-effective method of obtaining HIV-surveillance data without endangering or compromising the principles of public health and human rights.

In the Kabarole and Bundibugyo Districts of Uganda, biannual sentinel surveillance of HIV sero-prevalence in pregnant women at their first ante-natal care visit has been carried out since 1991. The data reveal a significant decline in the HIV prevalence rate in pregnant women between the ages of 15 and 19 years in the Kabarole District (see Appendix C).

It is unlikely that the drop in HIV rate is due to a selection error, since 90% to 92% of pregnant women in urban areas attended an ante-natal clinic at some point during their pregnancy (MFEP, 1995). Furthermore, since younger women are less likely to have had the disease long enough to have become infertile or sub-fertile (i.e., women who would not visit the ante-natal clinic), the scope of the distortions caused by aging and infertility is limited (Asiimwe-Okiror et al., 1997). In addition, since few people between the ages of 15 and 19 will have already died from the disease, the trend in HIV prevalence among this age group will be much closer to the trend in incidence. There are also indications that these findings may represent a corresponding reduction in HIV incidence for

the general population (UNAIDS unpublished, June 1997; Asiimwe-Okiror et al., 1997).

While these findings are significant, they are of limited use until we know what is responsible for the reported drop in prevalence. Identifying the trend is, unfortunately, as far as sentinel surveillance can take us. While this method may help to determine levels of infection, it does very little to identify the factors which have created the patterns of infection. Furthermore, it gives no insight as to how these factors can be modified, mitigated or overcome in the effort to change the future trend of the pandemic (Webb, 1997).

In an attempt to explain the drop in HIV prevalence within this age group, Killian et al. (1999) used a mathematical model to map out the progression of HIV infection with and without behavioural change. They found that the actual HIV prevalence curve was almost identical to the mathematically generated curve of the HIV pandemic with some form of behavioural change (see Appendix D). These results led the researchers to conclude that the drop in HIV infection was most likely due to some sort of behavioural change. The next step is, therefore, to determine if behavioural changes have indeed taken place in the study population, and then to identify and understand the driving forces behind those changes.

Behavioural Surveillance

Recognizing the importance of understanding the behavioural factors influencing the transmission of HIV, the UNAIDS, in collaboration with the

WHO Regional Office for Africa, has suggested that the HIV sentinel surveillance systems be strengthened and complemented with behavioural surveillance systems (EMIL unpublished, 1997). Linking this behavioural information with HIV prevalence data will provide a better understanding of changing trends in HIV prevalence, and of the general dynamics of the epidemic.

Although the WHO considers the repeated collection of behavioural data of utmost importance, behavioural surveillance systems have not been systematically established in most countries (UNAIDS unpublished, June 1997). In Uganda, however, surveys of AIDS-related knowledge and sexual attitudes and practices have been carried out since 1989 (Konde-Lule et al., 1989; Forster et al., 1989), including the survey being assessed for validity and reliability in the present study.

Sexual Behaviours among Secondary School Students in the Kabarole District

The District Health Team in the Kabarole district of Uganda has conducted regular surveillance of sexual behaviour in secondary school students since 1994, using a self-administered questionnaire. The questionnaire designed and pre-tested by the researchers at the Basic Health Services in 1994 has remained relatively unchanged over the past four years. Students from 15 randomly selected schools within the district fill out the self-administered questionnaire on a yearly basis. The survey includes questions on sexual behaviour as well as on previous experiences with STDs or HIV (see Appendix E

for the Questionnaire). This is the first study looking at the reliability of the questionnaire and assessing the validity of the findings and the trends it generates.

The findings from these questionnaires over the past four years indicate an increase in the sexual activity of secondary school students in the Kabarole District (Appendix F, Figure F1), as well as in the number of sexual partners reported by students (Appendix F, Figure F2). In addition, the age at which students are beginning to be sexually active fluctuates from year to year (Appendix F, Figure F3). None of these trends represent the adoption of risk-reducing behaviours, and therefore do not help in explaining the concurrent drop in HIV prevalence in this age group.

The findings from the questionnaire do indicate, however, a net increase in the use of condoms by sexually active students (Appendix F, Figure F4). This supports the idea that observed reductions in HIV prevalence in 15 to 19 year olds are, indeed, a result of a behavioural change and demonstrates how meaningful linking sentinel surveillance data with behavioural data can be in obtaining a clearer picture of the epidemic. The value of these findings depends, however, on their validity, that is the degree to which reported behaviours of secondary school students reflect actual behaviours.

Schopper et al. (1995) express their concern over the little effort which has gone into examining the quality of the data collected in sexual behaviour research in Africa. The Basic Health Services Team for the Kabarole District, therefore, found it important to assess the accuracy with which the data from the sexual

behaviour questionnaires represents adolescent sexual behaviours of secondary school students in the district before any conclusions are drawn.

Chapter 3: Literature Review

A Critique of the Survey Method for Self-Reported Sexual Behaviours

Quantitative surveys, such as self- or interview-administered questionnaires, are the most commonly used method of collecting data on sexual behaviour (Konings et al., 1995). This is primarily due to the fact that direct participant observation, in the case of sexual behaviour, is impossible for obvious logistic and ethical reasons.

Self-administered questionnaires are effective in school classes and health clinics for several reasons: they provide considerable privacy for the respondent, they can be administered by one person to large groups simultaneously, and they are relatively inexpensive to use in group situations (Catania et al., 1993). However, the reliance of sexual behaviour research on self-reported data, combined with the very sensitive nature of the topic, renders it more susceptible to problems of validity and reliability (Carballo et al., 1989; Konings et al., 1995). There are a number of factors and measurement errors, which can threaten validity and which must, therefore, be addressed in any validation study. Common measurement errors associated with self-reported sexual behaviour data inlude (Catania et al., 1993; Carballo et al., 1989):

- Refusal of participants to answer specific questions;
- Deliberate under-reporting, total concealment or over-reporting of a certain behaviour;
- Inaccurate responses due to recall lapse;

- Incomprehension of questions;
- Faulty time references.

These measurement errors are all highly sensitive to the research model, to various instrument variables, as well as to the respondents themselves. The research model includes how participants perceive the objectives of the research, the extent to which they are involved in designing the study, as well as the method(s) used for data collection. In data collection, for example, the degree of privacy and anonymity extended to the respondents will have an impact on their responses. In addition, the degree of credibility the study's representatives achieve, as well as the personal characteristics of the researcher(s) are believed to affect the accuracy of responses given (Huygens et al., 1996). Responses are also influenced by such instrument variables as terminology, question wording and order, as well as survey length (Catania et al., 1993). Finally, measurement errors are influenced by the respondents themselves in their ability to accurately recall details of their sexual experiences as well as by their motivations for taking part in the survey (Huygens et al., 1996).

Self-administered questionnaires are successful in limiting the error resulting from the personal characteristics or interviewer skills of the researcher, since he or she plays only a limited role in the process (i.e., the distribution and collection of questionnaires). However, the issue of if and how the participants' perception of the research, the instrument variables as well and the respondents themselves all influence measurement errors must be addressed.

The lack of a "gold standard" for validating self-reported sexual behaviour has been identified in the literature (Catania et al., 1993; McLaws et al., 1990). This has led to the recognition of an urgent need not only to minimize measurement errors in surveys, but also to develop a standardized approach to validating the findings from these surveys (Catania et al., 1993; Schopper et al, 1993).

A Critique of Validation Methods

Reliability

Reliability is defined as the extent to which a measuring procedure yields the same results on repeated trials (Schopper et al., 1993). In other words, it is the consistency of the measurement instrument or strategy (Goodwin et al., 1987). While reliability is not equivalent to validity, it is a necessary but not sufficient prerequisite for it (Saltzman et al., 1987).

The reliability of a questionnaire is commonly measured using the test-retest method (Carballo et al., 1989; Catania et al., 1993; Coates et al., 1986; Saltzman et al., 1987) which involves giving the same questionnaire (or survey) twice to the same sample of participants at a specific time interval. Responses on both questionnaires are then compared and tested for agreement, thereby assessing the reliability of the self-reported information. It is important to acknowledge that test-retest reliability coefficients can vary according to the time

interval between testing and to the amount of sexual experience of the participants (i.e., reliability decreases as the amount of information they have to recall increases) (Saltzman et al., 1987). The literature indicates that test-retest reliability has not been widely used to examine the reliability of AIDS-related sexual behaviours in developing countries (Konings et al., 1995).

Other methods of assessing the reliability of self-reported behaviours include measuring the agreement between partners responses or inter-partner (i.e., husband/wife) consistency (Konings et al., 1995; Schopper et al., 1993; Carballo et al., 1989). Diaries have also been used (McLaws et al., 1990) as a way of assessing the accuracy with which study participants are able to recall details of their sexual experiences.

Validity

Validity is defined as the accuracy with which a method measures what it is intended to measure (Schopper et al., 1993) and yields data that really represents 'reality' (Goodwin et al., 1987).

Triangulation is a term often associated with validity. Simply put, triangulation involves confirming a finding or findings by obtaining the same results using a different and independent measure (Miles & Huberman, 1994). Through triangulation by data type (i.e., varying the method by which the data are collected, while maintaining the same sample group), corroboration of findings can lead to confirmation of results and of validity, while inconsistencies or even

conflicting findings can lead to the elaboration of results (Miles & Huberman, 1994). In the case of quantitative data (such as a self-administered questionnaire), researchers might triangulate the results by obtaining qualitative texts or recordings (Miles & Huberman, 1994). Data might also be triangulated using specific quantitative proxy measures, such as looking at condom sales to validate reported condom use.

Comparison of self-reported survey results to trends and other quantitative proxy measures is a method commonly used to assess the validity of self-reported behaviours (Carballo et al., 1989). Huygens et al. (1996) highlight proxy measures such as STD prevalence, pregnancy rates or condom sales as being useful to assess validity of self-reported sexual behaviour. However, they acknowledge that the correlation between proxy measures and survey or questionnaire results can be misleading since STD prevalence data reflect only those who seek treatment in a clinical setting. In addition to this, condom sales give no indication as to whether they were being used properly, if at all (Huygens et al., 1996).

Qualitative methods, such as individual face to face interviews, and key informant interviews have been used in several validation studies (Huygens et al, 1996; James et al, 1991; Konings et al, 1995). These methods have been found useful not only in validating sexual behaviours, but also in providing a more elaborate and contextual understanding of those behaviours (Schopper et al., 1993). While focus group discussions are commonly used to pretest survey

instruments (Catania et al., 1993; Morgan, 1997), they have scarcely been used to assess the validity of the survey findings (Schopper et al., 1993).

Focus Group Discussions (FGDs)

While focus group discussions draw their origins from marketing research, they are increasingly being used as an important interviewing technique in qualitative research (Marshall & Rossman, 1995). Questions are asked in a permissive environment, created to encourage discussion and the expression of different opinions and point of views (Marshall & Rossman, 1995). The format of FGDs allows the facilitator the flexibility to explore unanticipated issues as they arise in the discussion, but at the same time, leaves the him or her less control over avoiding the discussion of dead-end or irrelevant issues. Furthermore, while the FGD attempts to study participants in a more natural, real-life atmosphere than in an individual interview, it is often difficult to conduct the discussion as a flowing conversation (Marshall & Rossman, 1995). The complementary nature of focus groups and surveys (blending qualitative and quantitative research) has been frequently confirmed in the literature (Fuller et al., 1993; Morgan, 1996; O'Brien et al., 1993; Powell et al., 1996; de Vries Hein et al, 1992; Zeller et al., 1993).

While focus group discussions have not been widely used in validation studies (Schopper et al., 1993), their use in such studies has proven to be useful and effective. Wolff et al. (1993) found that incorporating FGDs into a research

design with a sample survey enhanced the quality of analysis by illustrating and confirming conclusions from the survey, by providing clarification and elaboration of survey responses, and by identifying new explanatory categories for the results. Powell et al. (1996) used FGDs as a means of circumventing the limitations of questionnaires for users and providers of mental health, enhancing the validity of those questionnaires. New concerns and themes emerged from the focus groups, contextualizing and validating the questionnaire findings. As a result, focus group discussions can be an important part of the validation process.

Qualitative data is, therefore, helpful not only in assessing the validity through triangulation of the data, but also in providing a deeper and more contextual understanding of that data (Schopper et al., 1993). It is suggested that large-scale quantitative surveys be complemented with smaller qualitative studies to detect inaccuracies in the data, and to reduce biases in interpreting the data (Konings et al., 1995; Webb, 1997).

Given that the individual methods of assessing reliability and validity described above have their own strengths and limitations, self-reported sexual behaviours will be most effectively validated by using a multi-method approach based on blending quantitative and qualitative measures.

Most studies looking at self-reported sexual behaviour, including validation studies, have done so without the guidance or help of a theoretical framework (Webb, 1997). The said framework not only serves as a guide for the study, ensuring strength in the research, but also helps to avoid accusations of

"ethnopornography", something which many anthropologists have been accused of in their early studies on African sexual behaviours (and "deviances") (Webb, 1997). The multi-method approach is, therefore, framed within the AIDS Risk Reduction Model, a theoretical model looking at behavioural risk reduction as it relates to AIDS specifically.

Theoretical Framework – The AIDS Risk Reduction Model

The AIDS Risk Reduction Model (ARRM) is a psychosocial framework developed by Catania, Kegeles and Coates (1990) to examine people's efforts to avoid contracting HIV through sexual transmission. The general framework is derived from previous models relating to psychosocial problem solving, integrating elements of the Health Belief Model, "efficacy theory", emotional influences, and interpersonal processes (Catania et al., 1990). The framework is composed of three stages: (1) recognition of one's sexual behaviours as high risk for contracting HIV, (2) making a commitment to reduce high risk sexual contacts and increase low risk activities, and (3) seeking and enacting strategies to achieve these goals.

According to the first stage of this model, the knowledge of sexual activities associated with HIV transmission is not enough to elicit a decision for behaviour change. An individual must also perceive him or herself to be at risk of contracting HIV, and believe that having AIDS is undesirable. The model takes

into account social networks and norms as powerful forces influencing the labelling of health problems as well as of certain behaviours as undesirable or risky.

For the second stage, making a commitment to behaviour change, the model looks at the perceived costs and benefits of changing high-risk behaviours. These include the perceived effectiveness of the behaviours in reducing negative health consequences (response efficacy), and the associated enjoyment value of the "risky" behaviour. The commitment to behaviour change also relies on people's perceptions of their ability to perform activities that produce desired outcomes, (e.g., self-efficacy). Finally, the knowledge of the health utility and enjoyability of various sexual practices (i.e., that using a condom can prevent HIV infection and make sexual activity more enjoyable) is also expected to facilitate people's commitment to seek change.

Finally, once an individual has made the commitment to change his or her behaviour, the ARRM stipulates that that individual will begin taking steps to achieve this goal, including seeking information, obtaining remedies, and enacting solutions.

The ARRM has been chosen as the theoretical framework within which to base the present study, as it is the only model of the determinants of behavioural risk reduction published to date, specifically for HIV/AIDS. Since its first publication, it has been applied to several different populations in the United States, but rarely has it been used outside industrialized countries. Lindan et al.

(1991) and McGrath et al. (1993) both used it as the conceptual framework for their work with Rwandan and Ugandan women, respectively. Each found the ARRM to be a useful framework in which to explore the variables associated with behavioural change in different populations.

The present study applies the ARRM to the study of behavioural change in secondary school students in Uganda, thus further examining this model's applicability in different cultural settings. In addition, the ARRM's applicability to the study and understanding of behavioural changes in adolescents, specifically, is examined.

Chapter 4: Study Design

Sample Population and Education System in Uganda

Uganda's school system is based on seven years of primary school (Primary 1 to 7), four years of lower secondary school (Senior 1 to 4) and two years of upper secondary advanced level (Senior 5 to 6). Less than 20% of girls and approximately 40% of boys between the ages of 16 and 20 are currently enrolled in school (MFEP, 1995). Since only the Senior 2, 3 and 4 classes participated in the 1998 Questionnaire on sexual behaviours, only these same classes were included in the present study. English is the language of instruction in all Ugandan schools, and therefore all students were fluent in English. It is important to note, however, that the English level of students in rural schools was not as high as that of students in urban schools. A total of eight schools in the Kabarole District participated in the study; all were receptive to the study and welcoming of the researcher team.

Consent

Prior to beginning the fieldwork, the study was approved by the Health Research Ethics Board (University of Alberta), the Ministry of Health in Uganda, and the Uganda National Council for Science and Technology.

In light of the logistical complications associated with obtaining parental consent within the context of this study, verbal consent was given by the District Education Officer (DEO) and by the Head Masters of the participating schools. Students were given an information sheet detailing the purposes of the study, the possible risks/benefits, and that their participation was completely voluntary (see Appendix G). Details of the information sheet were also stated verbally by the principal researcher before distributing the questionnaires to the students.

The Research Team

Throughout the fieldwork, a qualified and experienced research team from the Basic Health Services Project in Fort Portal, Uganda supported the principal investigator. Dr. Bannet Ndyanabangi (Reproductive Health Co-ordinator for BHS), Tom Rubaale (Team Leader for BHS), and Dr. Geoffrey Kabagambe (District Medical Officer) oversaw the project, assisting with any administrative matters and advising the principal researcher for the sample selection as well as for other matters throughout the study. Dr. Ndyanabangi supervised much of the fieldwork.

The research associates were hired upon arrival in Uganda, on the recommendation of the field supervisors. The fieldwork was conducted by the principal investigator and the research associates. Ms. Ellen Bajenja and Mr. Cliff Mboijana contributed to the focus group designs, and facilitated the girls'

and boys' focus group discussions, respectively. Both hold degrees in the Social Sciences and have extensive experience doing qualitative health and community research. Ms. Bajenja is a social worker with the German Voluntary Service, while Mr. Mboijana is the co-ordinator for the Health Information Centre in Fort Portal. Both are originally from the district and speak Rutoro. John Nyakoojo, also from the Kabarole District, assisted with the design of FGD topics, with the administration of the questionnaires, and took notes/observed during the boys' FGDs.

The research team had a one-day training session, where the purpose, objectives and design of the study were outlined. An overview of the role and duties of a FGD facilitator as well as of a note-taker/observer was given (see Appendix H for training materials). In addition, mock FGDs were held in order to assist the facilitators to develop probes and follow-up questions, as well as to allow the note-takers to design a systemic method of recording the discussions. The FGD pilots were essential for developing a consistent approach of asking the questions and obtaining the desired information. In addition to the training session, the research team was provided with key articles on focus groups and HIV-related sexual behaviours, to which they could refer for information.

Reliability of the Questionnaire – Test-Retest

Assumptions

Adolescents constitute the most recent members of society to have become sexually active. Given this smaller time-frame, adolescents represent a group which, presumably, would have less difficulty recalling behaviours for the purposes of a questionnaire. A test-retest reliability assessment within this age group is, therefore, more likely to be a measure of the respondents' understanding of the questions and truthfulness of their responses rather than their ability to accurately recall their experiences. In addition to this, they are a sample population easily contacted and mobilized for a test-retest procedure, making the logistics of such a test relatively simple. It is for these reasons that the test-retest method was selected to measure the reliability of the self-reported sexual behaviours of secondary school students in the Kabarole District.

Selection of Sample Population

Schools were selected by the research team from the list of schools having participated in the yearly survey carried out in March/April 1998. The schools were selected based on their type (boarding or day; mixed or boys/girls only) as well as on their location (urban or rural). The selection was limited to schools within the proximity of Fort Portal to permit the research team to go and return from the site within the same day. Three schools were selected: School A (rural,

day, mixed); School B (urban, boy's, boarding); and School C (urban, girl's, boarding).

Letters introducing the researchers and outlining the study as well as what their participation would involve, were sent by the Basic Health Services Team Leader, the District Medical Officer, the District Education Officer, and the principal investigator to the Head Masters of the selected schools (see Appendix G). I then personally met with the Head Masters to address any of their questions or concerns, and to arrange a date and time to administer the questionnaires.

As in the 1998 Questionnaire, students from the Senior 2 (S2), Senior 3 (S3) and Senior 4 (S4) classes were asked to complete the questionnaire. Efforts were made to have only the students who completed the questionnaire earlier in the year participate in the test-retest (i.e., in larger schools, the same streams of students were asked to participate in the test re-test as had completed the questionnaire in March/April). Since there was no way of identifying the students who had not participated earlier in the year, no students were excluded from taking the test-retest questionnaire.

Procedure

The principal investigator, with the help of the research associates, distributed and collected the questionnaires. The teachers were not present while the students were completing the questionnaires. The students were not told that they were being asked to complete the same questionnaire as they had earlier that

year, although neither the questions nor the format had changed. The students also weren't told that they would be asked to complete the questionnaire again the following week. This was done to minimize recall bias, preventing students from making a conscious effort to remember the responses they were filling in. Seven to ten days following the first round of the questionnaires, the research team returned to each of the schools to have the same sample of students complete the questionnaire once again.

In order to match the same respondent's two questionnaires, while maintaining their anonymity, a card system was designed where each student received a card with a number on it. They were told that those carrying out the study would return the following week to hold open group discussions with them about the questionnaires, and that they would need their card if they wanted to participate. As an additional incentive for them to keep their card until the following week, they were told that they would receive a free pen if they brought the number back the following week. As the first round of questionnaires was being collected, the cards were handed out and the individual's number recorded onto his or her paper by the supervisor (e.g. 003A). The following week, the students were asked to hand in their cards along with their questionnaires. At that time their numbers were recorded on their questionnaire once again (e.g. 003B), and the students received their free pens.

Data Analysis

A total of 350 questionnaires were completed in the three schools during the first round of the Test-Retest, while only 273 were completed during the second round. The different response rates between the first and second round is due to varying attendance levels. A total of 229 pairs of questionnaires were matched and analyzed for reliability. Responses were entered into SPSS, and Kappa was used to measure the percent agreement between the first and second responses for categorical, dichotomous variables. For continuous variables (such as age at first sexual intercourse), the proportion of matched vs. discrepant responses was calculated.

Focus Group Discussions (FGD)

Focus groups discussions rely on an interactive group dynamic, where participants are regarded as experts, providing insights into attitudes, perceptions and opinions. They are an effective method of highlighting (sub)-cultural values or group norms, and allow researchers to identify common knowledge among the participants. This makes focus groups particularly sensitive to cultural variables, and is the reason why they are commonly useful in cross-cultural research (Kitzinger, 1996).

The focus group discussions, in this study, were semi-structured with a pre-determined set of questions, which were piloted in a rural and an urban school

with students from the Senior 2, Senior 3 and Senior 4 classes. The focus group questions were reviewed and revised significantly following the pilot focus groups (see Appendix H). Most of the changes consisted of adding lead-in questions to allow for a more flowing discussion, and modifying the wording and terminology of the questions to make them more culturally sensitive and appropriate for this age group.

Focus group discussions were carried out in English and were facilitated by two trained and experienced qualitative health researchers. In addition to their experience, facilitators were selected to match the study participants for gender, and background. A male note taker matching the participants gender, and background was also hired and trained to record and to observe the male focus groups. The principal investigator fulfilled the role of the note-taker during the FGDs with the girls.

The discussions were carried out in a location offering the maximum degree of privacy and quiet, mostly taking place either in an empty classroom or outdoors. The discussions were recorded using an audio tape-recorder, complemented by the notes recorded by the note-taker. The tape-recording device malfunctioned in four focus group discussions (B-2, B-3, B-4 and, D-3) therefore, data for these focus groups are taken only from the notes recorded by the note-taker. Discussions were later transcribed from the audio-tapes, and from the notes, into Microsoft Word.

Sodas and biscuits were provided during the discussions. Following each discussion, the facilitator turned off the recording device and students had the opportunity to address any questions they had relating to sexual or reproductive health.

Two different sets of FGDs were conducted for this study. The first set of discussions was held with a sub-sample of students who participated in the test-retest, in order to obtain their feedback on the questionnaire and research design. The other set of discussions was conducted with a different sample of students, and sought to assess the validity of the results obtained from the questionnaire by means of data triangulation.

FGD - Questionnaire Feedback

Following the second administration of the questionnaire (for test-retest), six girls and six boys from each class were randomly selected to take part in a semi-structured focus group discussion in which they were asked to give feedback on the questionnaire. The goal was to find out if there were words or questions not understood by students, as well as how the participants perceived the questionnaire and the research, and how free they felt to honestly report their sexual behaviours on the questionnaire. In other words, the influence of the research model, the instrument variables and the respondents themselves, on the accuracy of sexual behaviours reported by secondary school students in the district was assessed.

A total of 12 focus group discussions (six groups of boys and six groups of girls) were held (see Table 3 in Results for FGD composition). Since the students who participated in the FGDs had completed the questionnaire twice in the past two weeks, they were very familiar with its content. In addition to this, participants were each provided with a blank copy of the questionnaire to which they could refer during the discussion.

FGD – Validation of Sexual Behaviours

A separate set of discussions was conducted, where students were asked the same questions as in the self-administered questionnaire, but in a focus group discussion format. The goal of doing this was to compare the themes brought out in the focus groups with the results obtained from the 1998 Questionnaires and with the trends observed over the past four years, thereby assessing the validity of the questionnaire results through triangulation of the data.

Assumptions

Focus group discussions have been proven to be effective methods of obtaining indirect observations or impressions of other people's behaviours, or views. It is assumed, however, that for sexual behaviours participants will draw their responses not only from what they have observed, but also from their own experiences.

Selection of Sample Population

As with the test-restest, the schools were selected by the research team from the list of schools who participated in the questionnaire earlier in the year (excluding those selected for the test-retest). The selection was based on the type and location of the school, in order to obtain a representative sample of the secondary school student population in the district. Five schools were selected: School D (rural, day, mixed); School E (semi-urban, day, mixed); School F (urban, mixed, boarding); School G (urban, day, mixed); and School H (rural, day, mixed). All of the schools selected, with the exception of School F, had participated in the annual questionnaire in March/April, 1998. The same procedure of sending letters to the Head Masters (see Appendix G), and meeting with them personally, was followed for these schools as was for the schools who participated in the test-retest.

Two classes were selected for the focus groups in each school, depending on the availability of the classes. Participation from the S4 classes was limited due to the national examinations getting underway as the fieldwork was being conducted. Schools D and E were the only schools where the S4 class participated in the study. In each of the remaining schools, focus group discussions were held with boys and girls of S2 and S3 classes. A total of 16 focus groups dealing with sexual behaviours were conducted. The students were randomly selected (by giving each student a number, and then randomly selecting

six numbers), and each focus group had an average of six participants (see Table 4 in Results for FGD composition).

Data Analysis of Focus Group Discussions

A content analysis was conducted in order to bring out the major themes from the focus group discussions. Internal validity of data coding was assessed by means of triangulation through other researchers. Three independent researchers were asked to assign pre-determined codes to responses from three randomly selected questions. The coding for each response (by each rater) was then entered into SPSS and the proportion agreement between the raters and the principal investigator was calculated.

Chapter 5: Results

Test-Retest Reliability

Distribution of Sample Population

A total of 229 pairs of questionnaires were entered into SPSS and analysed for reliability. 53.2% of the respondents were male and 46.8% were female (see Table 1). The percent of responses was fairly evenly distributed between the three schools sampled: 34.5% of respondents were from School A, 31.7% from School B and 33.5% from School C. Students from Senior 4 made up 39.7% of the respondents, while Senior 2 and Senior 3 students made up 35.8% and 24.5% of the respondents, respectively.

Table 1. Distribution of test-retest and questionnaire participants by sex, residence, class and age.

Characteristic	Test-Retest	1998 Questionnaire
Sex		
Males	117 (53.2%)	703 (55.2%)
Females	103 (46.8%)	541 (44.8%)
Residence		
Urban	150 (65.5%)	568 (44.6%)
Rural	79 (34.5%)	706 (55.4%)
Class		
Senior 2	82 (35.8%)	486 (38.1%)
Senior 3	56 (24.5%)	402 (33.3%)
Senior 4	91 (39.7%)	386 (30.3%)
Age		
<16	42 (18.3%)	260 (20.4%)
16-17	76 (33.1%)	506 (39.7%)
18+	47 (20.4%)	429 (33.7%)
Not given	64 (27.8%)	79 (6.2%)

Agreement between responses

Test-retest measures the agreement between responses to a specific question answered at two different times by the same person. The proportion agreement and Kappa scores were measured and analysed for six questions from the questionnaire (see Table 2). The proportion agreement is a measure of the proportion of students whose answers on both questionnaires were in agreement, while Kappa gives the measure of agreement relative to what is expected by chance (Cohen, 1966). According to Landis and Koch (1977), a negative Kappa is poor, while a Kappa of 0-0.2 is considered low, 0.21-0.4 is fair, 0.41 to 0.6 is moderate, 0.61-0.8 is substantial and 0.81-1.00 constitutes an almost perfect level of agreement.

For the questionnaire all the Kappa scores, on average, ranged from substantial to almost perfect. The question which had the highest level agreement was 'Have you ever had sexual intercourse', with a Kappa of 0.858 in the three schools. The question with the lowest agreement referred to whether or not students (or their partner) had used a condom during their last sexual intercourse. The Kappa score for this question was 0.527, which is still considered moderate reliability (Landis & Koch, 1977).

Table 2. Measure of agreement between the first and second responses to questionnaires for self-reported sexual behaviours by secondary school students in the Kabarole District, Uganda.

	School A Rural, day mixed		School B Urban, boy's, boarding		School C Urban, girl's, boarding		Average Kappa
	Proportion agreement	Kappa	Proportion agreement	Kappa	Proportion agreement	Kappa	
Have you ever had sexual intercourse?	89.3%	0.765	93.0%	0.837	98.7%	0.973	0.858
Did you have sexual intercourse during the last three months?	72.5%	0.360	97.6%	0.932	84.8%	0.694	0.662
Have you ever used a condom?	83.3%	0.557	93.0%	0.861	91.2%	0.767	0.728
Did you use a condom during your last sexual intercourse?	86.7%	0.535	70.0%	0.211	96.2%	0.835	0.527
Have you ever had an HIV test?	95.0%	0.7	92.2%	0.403	100.0%	1.00	0.701
Would you be interested in having an HIV test, if you were given the chance?	87.7%	0.686	90.2%	0.644	91.2%	0.715	0.682

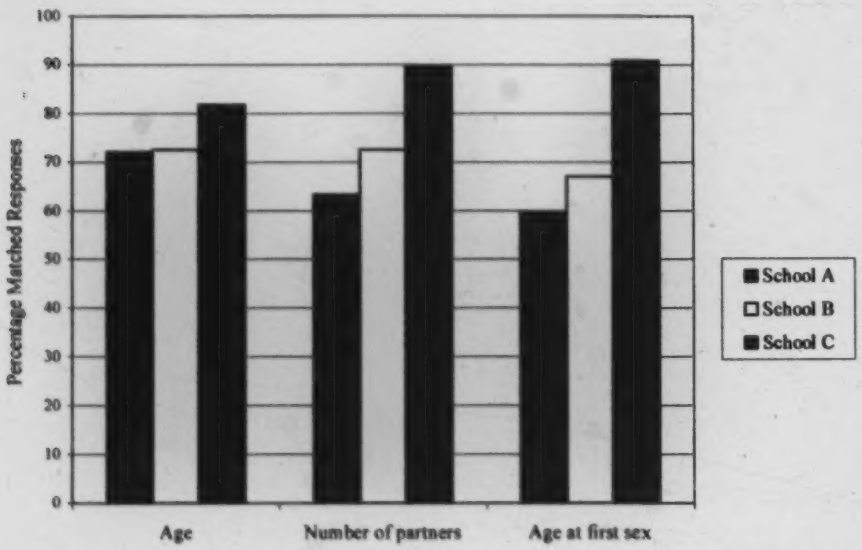
Note: Kappa scores: 0-0.2 is low a low level of agreement, 0.21-0.4 is fair, 0.41-0.6 is moderate, 0.61-0.8 is substantial and 0.81-1.00 constitutes almost perfect level of agreement (Landis & Koch, 1977).

Moderate Kappa scores (0.21-0.4) were noted in two different instances. School A scored a Kappa of 0.360 for the question on if they had had sexual intercourse during the last three months. School B, on the other hand, scored a Kappa of 0.211 when asked if they had used a condom during their last sexual intercourse.

Kappa scores differed between males and females on questions relating to condom use, recent sexual activity, and HIV testing. For "ever use" of condoms, males at School A had a lower Kappa (0.389), than did females (0.828), while the Kappa scores for School B and C were relatively similar. School B (boys) had only fair Kappa scores for current condom use (0.211) and HIV testing (0.403), while School C (girls) had almost perfect percent agreement for both those questions. In general, these results indicate that males in the rural area have less reliable responses for "ever condom use" than males in the urban area, and that females respond more consistently for these variables than do males.

For continuous variables such as age and number of sexual partners, the percentage of students who gave matching responses on both questionnaires was calculated (see Figure 1). The question where students were asked to state their age produced the most consistent answers, with 72.1% of Students in school A, 72.6% in School B, and 81.8% in School C giving matching responses on both questionnaires. Students from School C gave more consistent responses for all three questions, while School A gave the least consistent responses.

Figure 1. Percentage of Matched Responses by Secondary School Students, in the Test-Retest.

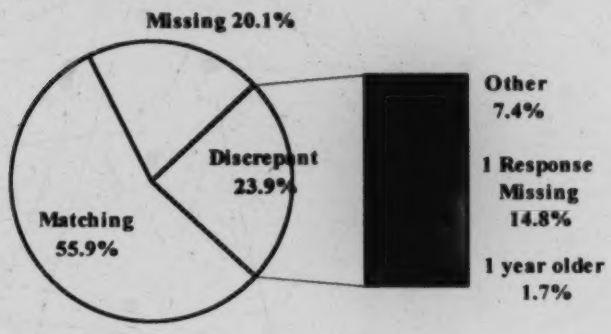


It is possible that the discrepant responses for age and number of sexual partners are due to a valid change, either due to a birthday or to recent sexual experiences, during the time interval between the questionnaires. In order to account for this possibility, the discrepant responses for these variables were further analyzed for these variables.

For age, only 1.7 % of respondents (or 7.4% of discrepant responses) reported being one year older on the second questionnaire than they had reported on the first; an increase which could represent a birthday (see Figure 2). On the other hand, 7.4% of respondents (or 30.9% of discrepant responses) reported an age on the second questionnaire that was either lower, or two or more years

higher than on their first questionnaire response. Most of the discrepant responses (63%), however, for this variable were attributed to one of the responses being missing (i.e., respondents filled in their age on only one of the questionnaires).

Figure 2. Distribution of Matching and Discrepant Responses and Breakdown of Discrepant Responses in Test-Retest for Age.

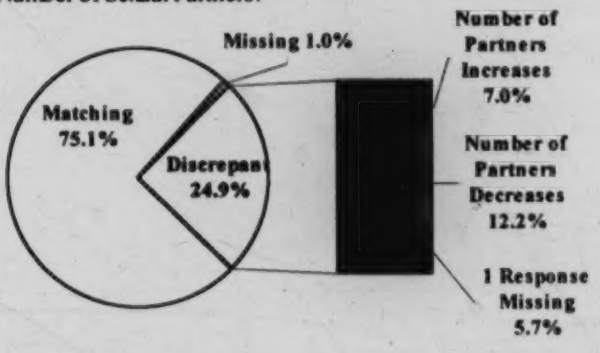


For number of sexual partners, 7.0% of the respondents who have ever had sex reported a higher number of sexual partners on the second questionnaire than they did on the first (see Figure 3). In other words, 28% of all the discrepant responses may be due to a legitimate increase in the number of sexual partners. However, 12.2% of respondents (almost half of all discrepant responses) reported a decrease in the number of sexual partners they have ever had, which is not a plausible scenario. As with age, a good portion of the discrepant responses (22%) for number of sexual partners can be attributed to students only answering the

question on one of the questionnaires, giving no indication as to the truthfulness or reliability of their responses.

For both the number of partners and the age at first sexual intercourse, female responses were found to have a significantly higher reliability than male responses. For number of sexual partners, 83.3% of females gave matching responses, while only 70.1% of males did (X^2=5.28, df=1, $p<0.05$). Similarly for age at first sexual intercourse, 83.5% of female responses matched, while only 63.2% of the male responses were matching (X^2=11.3, df=1, $p<0.005$).

Figure 3. Distribution of Matching and Discrepant Responses, and Breakdown of Discrepant Responses in Test-Retest for Number of Sexual Partners.



Quality of the Research Model and Survey Instrument

Feedback on the research process and the questionnaire were obtained from students through the use of Focus Group Discussions (FGDs). Twelve FGDs were held with S2, S3 and S4 students from the same schools who participated in the test-retest (see Table 3 for FGD composition).

Table 3. Composition of Focus Groups for Questionnaire Feedback.

	School A (Boys) (rural, day, mixed)	**School A (Girls)** (rural, day, mixed)	**School B** (urban, boarding, boys)	**School C** (urban, boarding, girls)
Focus Group Senior 2 (mean age)	A-2b Age 14-18 (16.7)	A-2g Age 15-17 (16)	B-2 Age 14-16 (14.8)	C-2 Age 13-16 (14.8)
Focus Group Senior 3 (mean age)	A-3b Age 18-20 (18.8)	A-3g Age 13-18 (16.3)	B-3 Age 16-18 (17.2)	C-3 Age 15-18 (16.3)
Focus Group Senior 4 (mean age)	A-4b Age 18-23 (19.5)	A-4g Age 17-19 (18)	B-4 Age 17-18 (17.5)	C-4 Age 17-19 (17.7)

Instrument Variables

In order to assess the extent to which instrument variables were affecting the reliability of responses, students were asked to comment on the wording used, on any questions they found difficult to understand and on how comfortable they felt with the questionnaire and research process.

All the groups said that they generally liked the questionnaire, and that the formatting and wording made it easy to understand and follow. When asked if there were any words or phrases that were not clear or not understood, the term 'ulcer' was mentioned six times, 'traditional healer' was mentioned three times and 'discharge' twice. None of the groups reported that there were any specific question(s) that they did not understand or could not answer. Although the level of spoken English was much higher in more urban schools (B and C), than in rural schools (A), there was no notable difference between the students' reported understanding of the questionnaire. One student pointed out that different schools use different 'slangs', so it would be difficult for the researchers to design a questionnaire which all the students understood in the same way.

> *"I really don't think there is any complicated term here, and what maybe we know as slangs may be understood here but not by students at another school, because they have different slangs".* (16 year old girl)

One of the limitations of using a self-administered questionnaire is that one word or term can have many different meanings to many different people. The students were, therefore, asked to give their definition or interpretation of four different terms, which (based on the results of the pilot FGDs) seemed to give students the most problems. Please refer to the questionnaire (Appendix E) to see the context in which these terms are used.

Health Institution (Question 5)

For most students, the term health institution was associated with any non-traditional treatment facility. Some examples such as hospitals, clinics and health centres were provided. Most students associated health

institution as not only a place to go for treatment, but as a place which also offers advice, health education and health promotion.

Traditional healer (Question 5)

All the students agreed that a traditional healer was the same thing as a witchdoctor or a herbalist. They described them as people who heal using herbs or local medicines. One person described a traditional healer as where people "used" to go for treatment, and another said that it was "where a person would go if they were bewitched".

Discharge (Question 5)

Most students understood that discharge was the secretion or expulsion of some pus-like fluid from the body. Some specified that it came out of the private parts, and that it could be a result of a STD. Boys associated it with a difficulty or failure to urinate, while girls associated it with something that was painful.

Ulcer (Question 5)

Most students described ulcers as being either "sores" or "wounds". Some said that they affected the private parts, while others stated they affected the stomach, and only a few said they could affect both. Two boys mentioned that it was a disease that could affect the lungs, and one mentioned that it affected the appendix.

The participants' comfort level with the researchers, as well as with the questionnaire itself and the way in which it is administered can have an impact on the reliability and truthfulness with which they respond to the questionnaire. Students were, therefore, asked if there were any questions that made them feel embarrassed or uncomfortable to answer. While four groups agreed that they felt comfortable with all the questions, two groups stated that they felt embarrassed by Question 5 (disease on their private parts), and another four groups mentioned that Question 2 (sexual experience) was maybe too personal. One individual

stated that this could have an impact on the truthfulness of the students' responses.

> *"I thought that some students may not be honest on a question like number 2 because I think some of these questions are private".* (17 year old girl)

All the groups stated that they were confident that the anonymity of their responses on the questionnaire would be protected (referring to when they filled it earlier in the year, and any other time before that). They were confident that their responses would remain anonymous since there was no identifying information on the questionnaire, and since they filled out the questionnaires privately. In addition to this, it is clear that they trusted the researchers; the anonymity of their responses was either written on the questionnaire and/or they were informed verbally by those administering the questionnaires. One student mentioned that the questionnaire gave students a chance to express their views anonymously, by writing them instead of talking about them.

> *"some of us may not want to explain by mouth why you did not use a condom, but it is easy to write it".* (17 year old girl)

A few students mentioned that they felt differently about their anonymity the last time they took the questionnaire (test-retest) because of the numbered card that they were given. Although no names were ever recorded, they were concerned that their number could be linked back to them.

Students' perception of the research model and of the questionnaire

As was stated earlier, all the students generally liked the questionnaire. They found it had an important educational value, teaching students about reproductive health. They also liked it because they felt familiar with the topic and could relate to the questions. They appreciated the opportunity to voice their views and express their needs to researchers and people who are in positions to do something about them.

When asked what they thought the *purpose* of the questionnaire was, three main themes emerged from their responses. First, they believed that it served to collect information on the health status and health behaviours of students, as well as on students' health concerns and needs. They also believed researchers used the questionnaire to assess the level of knowledge and awareness of STDs, HIV and pregnancy prevention in secondary school students. Finally, students stated that the questionnaire served an educational purpose and that it was an effective method of teaching students about how to protect themselves against STDs or pregnancies.

All the groups stated that they believed researchers were going to use the results from the questionnaire to look at trends in sexual behaviours and the health status of students. They also believed that researchers were going to use the results to meet students' needs and "help" them by increasing health education, by making testing, treatment and medicines more readily available and accessible, and by making condoms more accessible for their needs.

At least one person in each group stated that the questionnaire was *useful*. The educational value of the questionnaire was reiterated when students were asked to state why they thought the questionnaire was useful. Students also said that the questionnaire gave students an opportunity to reflect on their own behaviours and choices. They said it was useful because it helped students to make the 'right' choices towards achieving healthier sexual lifestyles:

> *"they encourage us to change our personal habits"* (17 year old girl)
>
> *"it can give students confidence to abstain"* (17 year old girl).

Only two students mentioned that the questionnaire was useful because they got something in return for their participation (one said becoming famous in the 'outside world' while the other said because they got pens).

Students in four separate groups, however, thought the questionnaires were useless because of the lack of response made on the part of the researchers following the administration of the questionnaires. The results from the questionnaires were not shared with the students, and no perceived responses to the problems and needs of the students were made by the research team (over the past years):

> *"they would be useful but what makes them useless so far is that I've never seen any follow-up"* (17 year old girl)
>
> *"we have filled them time and time again, but nothing has really happened"* (18 year old boy)

This seems to have affected the students' willingness to take the questionnaire seriously and to give truthful responses:

> *"they just fill it in for fun, because they know there won't be any response"* (18 year old girl)

The challenge of getting truthful responses from the students was mentioned by one student:

> *"it could be useful, if you want to find out something on your part, but the problem is that not everyone will be honest"* (17 year old girl)

These results have important implications for the validity and the sustainability of sexual behaviour research within this population; this will be addressed further in the Discussion section (Chapter 6).

Validity of Self-Reported Sexual Behaviours from 1998 Questionnaire

As a means of triangulating the data obtained from the 1998 self-administered questionnaire, focus group discussions were held with students from five schools within the Kabarole District (see Tables 4 and 5 for FGD composition).

Table 4. Composition of Focus Groups for Sexual Behaviours (Boys).

	School D (rural, day, mixed)	**School E** (semi-urban, day, mixed)	**School F** (urban, boarding, mixed)	**School G** (urban, day, mixed)
Focus Groups (mean age)	D-3 Senior 3 Age 16-19 (17.5)	E-2b Senior 2 Age 16-18 (17.3)	F-2b Senior 2 Age 14-16 (15.3)	G-2b Senior 2 Age 15-17 (16.2)
Focus Groups (mean age)	D-4 Senior 4 Age 18-20 (18.7)	E-4b Senior 4 Age 17-19 (18.2)	F-3b Senior 3 Age 16-19 (17)	G-3b Senior 3 Age 15-18 (16.8)

Table 5. Composition of Focus Groups for Sexual Behaviours (Girls).

	School H (rural, day, mixed)	**School E** (semi-urban, day, mixed)	**School F** (urban, boarding, mixed)	**School G** (urban, day, mixed)
Focus Groups (mean age)	H-2 Senior 2 Age 15-17 (16.2)	E-2g Senior 2 Age 14-19 (16)	F-3g Senior 2 Age 14-16 (14.8)	G-2g Senior 2 Age 15-16 (15.5)
Focus Groups (mean age)	H-3 Senior 3 Age 16-17 (16.6)	E-4g Senior 4 Age 17-18 (17.7)	F-3g Senior 3 Age 15-17 (16.2)	G-3g Senior 3 Age 16-17 (16.7)

Sexual Activity

All of the groups (even the S2 and S3 classes) stated that there is a high level of sexual activity among students their age. The results of the 1998 questionnaire indicate that 53.5% of respondents had ever had sexual intercourse.

A number of cultural, social, economical and personal reasons were listed as determinants of sexual activity in secondary school students. Economic need

was stated as one of the major factors influencing sexual activity among girls, while social and peer pressures were more of an issue for boys. Some boys mentioned that they are encouraged to be sexually active by their elders. This might be in accordance with the belief of several students that if one does not engage in sexual activities during adolescence, that individual will face reproductive health problems (infertility, or problems bearing children) in adulthood. Many students also stated that sexual activity was largely determined on a more personal level according to the development of an individual (i.e., the 'adolescent stage'), their curiosity about sex, their attraction to someone, or out of enjoyment.

Onset of Sexual Activity

Students gave a wide range of ages at which most boys and girls begin being sexually active. However, almost all the groups believed that girls begin 'playing sex' at an earlier age than boys do. Interestingly, the results from the 1998 questionnaire show that there is no significant difference between the age at which boys and girls become sexually active (mean age boys = 13.8, mean age for girls=14.0, $t=0.749$, $p=0.45$). The main reason given why girls were believed to start 'playing sex' earlier than boys was that sexual activity depends on the growth and development of the body, and that girls grow or mature faster than boys do.

Number of Sexual Partners

When asked to estimate how many sexual partners they believed girls and boys their age would have from the time they start being sexually active until the present, the groups gave a variety of responses. However, almost all the girls within the FGDs believed that boys had more sexual partners than girls, whereas almost all the boys believed that it was girls who had more sexual partners. The questionnaire 1998 results indicate that there is no significant difference between the number of partners between males and females (mean for boys=3.6, mean for girls=3.2, t=1.105, p=0.27).

Most boys believed that girls had more partners because of economic need, whereas the girls believed boys had more because they wanted to prove their 'manhood' to themselves and to their friends.

Condom Use

While most groups stated that condom use was widespread among young people, it was also mentioned that there are still some students who do not use them. According to the 1998 questionnaire, 65.1% of sexually active students reported ever having used a condom, and 74.9% of those reported having used a condom the last time they engaged in sexual intercourse. Females reported a higher level of condom use (77.1% have ever used one) as well as of current condom use (80.4% of those who have ever used a condom reported using one

during their last sexual intercourse), than the males (57.8% ever used and 70.3% currently use).

Enjoyment and sexual satisfaction was one of the main determinants emerging from the FGDs for whether or not a student decided to use a condom. Several students referred to contrasting condom use with "body to body contact", in order to compare their level of satisfaction. A few students also mentioned using condoms to increase sexual satisfaction, "for extra pleasure", while many students (particularly boys) associated condom use with decreased sexual pleasure.

> *"because you cannot taste a sweet when it is still in the wrapper"* (15 year old boy)

Trust in one's sexual partner also factored into students' decisions on condom use. Some said that students use condoms specifically because they lacked trust in their sexual partner, while others indicated that some do not use them since using a condom can be interpreted as a sign of unfaithfulness.

> *"some girls are forcing boys not to use condoms – they say that if you use a condom, you don't love her, that you are just using her, that you are not faithful to her"* (19 year old boy)

Knowledge and social influences were also determinants of condom use mentioned by students. A number of participants indicated that a lack of information of where to buy condoms and how to use them would explain why some students don't use them. One participant explained that some boys might not want to use condoms because it is considered a "waste of sperm". Other

students, however, stated that some used condoms because it made them feel "modern". It is not clear if embarrassment is a factor in condom use, but it is, according to most of the focus group participants, a determinant of where most students choose to go for condoms. While most students knew that condoms could be obtained free of charge in clinics or health units, they preferred to buy them from shops. The main reason was because shops are perceived to offer more confidentiality and because there are no questions asked of them.

> *"usually those collected from the health unit, there is a lot of counseling and a lot of questions to answer – but for shops, the shop keeper just receives the money and gives the condom"* (15 year old boy)

> *"they don't have fear that the seller will reveal their information"* (17 year old boy)

The focus group discussions also revealed that it is still not socially acceptable for women to have condoms, or to actively participate in their use. Most boys were very opposed to having girls play any kind of role in condom use (e.g., by helping them to put it on). Both girls and boys stated that it was uncommon for girls to have condoms. Most girls stated that was because they were afraid that others would think that they "liked sex very much" or that boys will think, "they need sex so badly". When one of the groups was asked if girls carried around condoms, one participant responded: "yes, especially prostitutes".

Response efficacy, the belief that condoms are an effective way of reducing the risk of HIV infection, also influenced students' decision to use condoms. For the majority of students, protection against STDs, pregnancies, or

both, were the primary reasons for using condoms. For a number of other students, however, the non-use of condoms was rationalized by the belief that they would either cause more harm than good, or that they would not be effective anyway (fear of it splitting or bursting).

"some fear the condom will remain inside the girl" (16 year old boy)

"the condom is not 100% effective" (17 year old girl)

Finally, personal motivation of students was also stated as a factor in students' decisions to use condoms. Several students (both boys and girls) felt that some would choose not to use condoms in order to intentionally spread a disease or make a girl pregnant. This idea is also brought out during focus group discussions on sexual behaviours, and may relate more to the students' perceived risk of contracting HIV than to condom use; this will be addressed further on in this section.

HIV testing

Almost all the groups stated that most students, even if given the chance, would not go for an HIV test. In contrast to this, the questionnaire results indicate that 59.4% of students who had never been tested reported that they would be interested in having an HIV test, if given a chance. When asked to elaborate on the reasons why they felt most students wouldn't go for a test, FGD participants stated that a test is not needed when an individual is already displaying the

symptoms of AIDS. They also pointed out the uselessness of getting a test, since there is no treatment or cure for the disease. By far, the most frequently stated reason that students would not go for an HIV test was fear. Either fear of being recognized going in for the test, and/or fear of knowing the results of the test (that they are dying; fear of death).

> *"the question saying 'if you had a chance, would you be interested in having an HIV test?' – I said 'yes', for the sake of filling it, but in actual sense I would like to tell you firmly that if I was infected I would not go for an HIV test. Because in most cases of us as youth, we fear. So, though I said 'yes', if I really know that maybe I am infected, I can't go for a check – it isn't possible"* (18 year old girl)

Similarly, another person stated that the only people who would go in for an HIV test are those who are certain that they aren't infected. These findings are indicative of the strong social stigma still associated with AIDS in Uganda.

The stigma associated with AIDS was reiterated when participants were asked if they believed that young people would notify their partners if they found out they were HIV positive. All the groups overwhelmingly stated that they believed students would not notify their partners if they were HIV positive. In this case, the students seem to think that the costs associated with telling a partner or friend/family member, for that matter, outweighed the benefits. The main reason stated for not telling a partner was fear of rejection from that partner. Students would also fear stigmatization if others found out about their status. Participants believed that HIV positive students would fear not being able to find another partner, or "lose market". They would also fear being expelled from

school, or suffer abuse from their parents. Most students felt that they would not tell anyone of their status, because it would only cause further social stigmatization, abuse, or worry for their friends and family.

AIDS is also highly associated with hopelessness, given that there is no cure, and that treatment and support of AIDS patients is limited (and often non-existent) outside of major urban centres. The hopelessness that students feel towards AIDS became evident when several of them referred to suicide as a response to finding out you are HIV positive.

> *"some people fear because when he goes in for a test and he gets to know he has AIDS, he can easily suicide himself"* (19 year old boy)

The stigma associated with HIV/AIDS was further evidenced when students were asked if their decision (to notify their partner) would be different if it wasn't HIV, but some other sexually transmitted disease. In this case, students overwhelmingly responded that they could and would tell their friends and families, as well as their partners. The main reason for this is efficacy: STDs can be treated and cured, while HIV is a deadly disease.

> *"they know that if you are sick of STDs you will be helped, but AIDS you won't be given any help – the only help is to die"* (15 year old girl)

According to the students' responses, STDs are easier to talk about since they are perceived as being more "common" than HIV, which is still considered to be a relatively new disease.

> *"some people fear to talk about AIDS because it can lead to shame – the STDs are more common, so there is no need to feel that shame"* (16 year old girl)

Several people also stated that there is less "shame" associated with other STDs because some of them can be acquired by ways other than having sexual intercourse, indicating that perhaps the shame is not from the disease itself, but from the act which lead to the disease.

> *"for HIV, the parent will prove that you went for sex, but with syphilis or gonorrhea the parent might think that it generated from your grandparents – that it was passed on by the parents"* (17 year old girl)

Validation of Trends Based on Questionnaire Findings from 1994 to 1998

Trend in age at first sexual activity

Focus group participants indicated that they believe students (both boys and girls) are becoming sexually active at an earlier age than they used to four or five years ago. This is corroborated by the results of the 1998 questionnaire, which indicate that students in Senior 1 (average age at first sexual intercourse 13.2 years) became sexually active at an earlier age than students in Senior 3, (average age of first sexual intercourse 14.1). The trend from the questionnaires since 1994 indicate that the age at first sexual intercourse fluctuates from year to year (Appendix F, Figure F3).

Most groups attributed an earlier onset of sexual activity to changing social values (or "modernization"), the influence of the media, economic need, and the increased availability of both condoms and other contraceptive methods.

Trend in number of partners

Almost all the focus group participants believed that the number of sexual partners for secondary school students has increased over the past four or five years, corroborating the findings of the questionnaire which indicate a consistent increase in the number of sexual partners since 1994 (Appendix F, Figure F2).

Once again, most students attributed this trend to changing social and cultural values, including an increasing lack of parental discipline, and an inability of students to "control themselves". Some also stated that later marriages contributed to people having more sexual partners (pre-maritally), but these were students attending an elite boarding school and who, therefore, have a greater chance of pursuing their education, and delaying marriage.

Trend in condom use

Almost all the groups believed that young people were using condoms more today than they were four to five years ago. This confirms the findings from the questionnaires over the past four years, which clearly show a net increase in condom use since 1994 (Appendix F, Figure F4).

Both boys and girls, during the focus groups, stated that an increased exposure to information about STDs, as well as about condoms and their use has led to the sensitization of students to using them. In the FGDs, several boys groups mentioned the role of the media (radio advertisements) in the dissemination of this information. Most groups also mentioned that the increased availability and accessibility of condoms has contributed to their increased use over the years.

Inter-Rater Validity of Coding

A total of 259 responses, from three randomly selected focus group questions, were coded by four independent raters. Raters were skilled in research methods, and had exposure to qualitative methods. An inter-rater agreement of 84.5% was found between the raters and the principal investigator.

Table 6. Validity and reliability of self-reported sexual behaviours in secondary school students, Kabarole District, Uganda.

	Focus Group Discussion	**1998 Questionnaire** (March/April, 1998)	**Reliability Measure**
Sexual activity	High level of sexual activity among secondary school students (all grades)	53.5% of respondents said they had ever had sexual intercourse	Kappa = 0.858
Age at first sexual intercourse	Both girls and boys state that girls start being sexually active at an earlier age than boys do	No significant difference between reported age at first sexual intercourse	72.5% matched responses
Number of sexual partners	Boys: believe girls have more sexual partners Girls: believe boys have more sexual partners	No significant difference between number of partners for girls and boys	75.4% matched responses
Condom use	Most students use condoms, but some don't Factors influencing condom use: - Enjoyment/sexual satisfaction - Relation of condom use to trust/faithfulness of partner - Knowledge of method and social influences - Belief in efficacy of condom use	65.1% of sexually active students have ever used a condom; 74.9% used a condom during their last sexual intercourse	Kappa = 0.728 Kappa = 0.527
HIV testing	Most students would not go for an HIV test - Fear of being recognized - Fear of knowing that you are positive - Uselessness of test	59.4% would go for a test, if given the chance	Kappa = 0.682

Chapter 6: Discussion

Overall Reliability and Quality of Questionnaire and Research Model

According to Konings et al. (1995), there is a need to ensure that the respondents are truly willing to respond to the questions, and unambiguously understand the meaning of each question, in order to ensure the validity of the data collected. Based on the Kappa scores and the proportion of students having given matching responses, we can say that the questionnaire is, for the most part, a reliable tool to collect self-reported sexual behaviour.

Difficult terminology or language was not generally a barrier to obtaining accurate responses, with the majority of students displaying a fairly consistent and accurate understanding of most terms used in the questionnaire. In order to avoid any future misinterpretations of certain words, however, the BHS research team might consider giving concrete examples of what they understand to be 'traditional healers' or 'health institutions'.

It is clear that students trusted the researchers and felt confident that their anonymity would be protected, making them feel comfortable to answer questions openly and honestly. However, there seems to be an inverse relationship between the degree of reliability of a question, and how sensitive it is in nature. Saltzman et al. (1989) found a higher degree of reliability for demographic information than for self-reported behaviours that were more sensitive in nature. In this case,

students explicitly stated that questions relating to sexual activity, as opposed to those aimed at assessing knowledge or attitudes, were too personal and consequently may have resulted in some under- or over-reporting of certain sexual behaviours for these questions.

By far, the most significant variable influencing the accuracy and reliability of responses on this questionnaire was the students' perception of the purpose and usefulness of the research. Students perceived the questionnaire in a way which researchers had probably not intended; they saw it as a useful and effective educational tool, promoting and perhaps even inciting the adoption of risk reducing behaviours. Two salient points emerge from this finding, which the BHS team should consider. First, false information that could potentially mislead students (e.g. that you can prevent STDs by using pills) should not be included in the questionnaire. Secondly, BHS might consider attaching an information sheet or self-quiz to the questionnaire, capitalizing on the questionnaire as an effective tool for disseminating relevant health information. Such a measure would also make students feel like they are getting something in return for their participation in the study, which addresses the next issue related to the research model and how it affects the quality of the data collected.

Students believed that, in exchange for their participation in the questionnaire from one year to another, they would receive some assistance from the researchers in order to help them overcome some of the barriers they face with regards to reproductive health. After four years of seeing the same questionnaire

and the same researchers every year, the students still hadn't seen any response or received any assistance from these researchers. While the overall reliability scores for most of the questions were high, FGDs indicate that this lack of response on the part of the researchers has led to a decreased willingness of students to take the questionnaire seriously, affecting the truthfulness of their responses. Furthermore, it is highly probable that this will affect the willingness with which the students agree to participate in the coming years, making the future reliability and sustainability of this type of research in the district highly uncertain.

Huygens et al. (1996) found that in order to sustain the co-operation in a research community, it is essential to address, at least to some extent, the health requirements and other priorities perceived by the community or study population. Huygens refers to the research agenda as a "social contract" between the researchers and the study population, who - rightfully - expect some immediate benefits for their participation. Therefore, although students fundamentally believe in the usefulness of such research, and welcome the opportunity to be part of it, the sustainability of the research will depend on the researchers taking a more active role in fulfilling their end of the "social contract". A shift to a more participatory approach to research may be in order if this research is to not only continue, but to thrive (Cornwall et al., 1995).

Level of Sexual Activity in Secondary School Students

The WHO/Global Program on AIDS (GPA) has estimated that two thirds of HIV positive individuals were infected during adolescence, an estimation that has been supported elsewhere in the literature (e.g., McGrath et al., 1993). The proportion of sexually active adolescents can therefore be considered as an important predicting indicator for HIV prevalence within this age group. The responses from the FGDs, where students stated that sexual activity was very common among their peers, are concurrent with the findings from the 1998 questionnaire in which 53.5% of students reported ever having sexual intercourse.

While this question is considered highly reliable, with an average Kappa of 0.858, it is possible that 53.5% is an underestimation of the actual number of sexually active students in the district. The strong influence of social and economic pressures exerted on secondary school students to engage in sexual activity, combined with equally strong socio-cultural norms prohibiting sex before marriage might cause a discrepancy between the reported and actual level of sexual activity within this age group. Schopper et al. (1993), for example, found that while one tenth of respondents reported premarital sex as unacceptable, one third of them acknowledged having had sexual intercourse before marriage. In addition, the question on sexual activity was one of the questions singled out by students in the FGDs as being too personal in nature, which may have led to an under-reporting of behaviours.

Nevertheless, both the test-retest and the FGD responses confirm the increase in sexual activity observed over the past four years. There is no evidence in the literature indicating that sexual activity of Ugandan adolescents in secondary school has done anything but increase over the past years. However, it is important to mention that most of these studies (Asiimwe-Okiror et al. 1997; Konings et al., 1995) look at sexual activity with non-regular partners, as opposed to just sexual activity.

Onset of Sexual Activity

The age of onset of sexual activity will possibly not only influence the number of sexual partners an individual will have before marriage, but also their risk of being infected with HIV. The findings from the FGDs, that girls become sexually active at an earlier age than boys, were not consistent with those of the questionnaire which indicated no significant difference between the reported age of first sexual intercourse for boys and girls. The FGD results were consistent, however, with the literature; the 1995 Demographic and Health Survey (MFEP, 1995) found that women generally become sexually active at an earlier age than do men.

The reliability of the question on age at first sexual intercourse for the three schools was high on average (72.5% of respondents gave matching answers), but was lower for the rural school and the boy's boarding school. In

addition, the female responses for this question were significantly more consistent than were the male responses. Since age at first sexual intercourse is not something that could have changed during the period of the time interval between the two questionnaires, other possible explanations for the conflicting findings must be explored.

The lower consistency of male responses (both in urban and rural settings) could signify that males are less likely to accurately recall the age at which they first had sexual intercourse. Those participants could, therefore, have under-estimated their age at first sexual intercourse, explaining why there is no significant difference between ages for girls and boys. Another explanation might be that girls are consistently reporting becoming sexually active at an older age than they actually did, in order to make their responses more socially acceptable. If this were really the case, however, might they not also have simply denied ever having had sexual intercourse in the earlier question?

Another possible explanation for the discrepancy between the FGD and questionnaire results would be an honest misperception of reality on the part of the FGD participants. As was stated by the participants, and is supported in the literature (Nduati & Kiai, 1997), age at first sexual intercourse is strongly related to age of physical maturation. Since girls observably mature faster than boys, it could be assumed by both girls and boys that girls begin being sexually active at an earlier age, even though this may not be the case in actuality.

While the findings from the questionnaire from the past four years show no clear trends in age at onset of sexual intercourse, results from the FGDs indicate that students are beginning to 'play sex' at an earlier age than they used to. The Demographic and Health survey reports no significant change in the age at which women have sexual intercourse for the first time (MFEP, 1995). The evidence presented is not strong enough to support the claim that secondary school students in the Kabarole District are becoming sexually active at an earlier age than they used to. We can be fairly certain, however, that the drop in HIV prevalence within this age group in the district is not a result of a delay in the onset of sexual activity.

Number of Sexual Partners

The number of sexual partners is a common indicator of HIV prevalence (Carael et al., 1995). Interestingly, the FGD results did not only conflict with the questionnaire findings but the boys' and girls' responses during the FGDs conflicted with each other. While there was no significant difference in the number of partners between girls and boys who responded to the questionnaire, the girls and boys who participated in the FGDs perceived the opposite sex as having more partners than their own sex.

The consistency with which the number of sexual partners was reported by both males (70.1%), and females (83.2%) indicates that this is not a reliability or

recall problem. In addition, close to 30% of those who gave discrepant responses reported an increase in the number of sexual partners, which may represent a legitimate increase of partners during the time interval between test and retest.

There is a possibility of either over or under-reporting in the number of sexual partners. Other studies have found that while there is no evidence suggesting that men are over-reporting the number of non-marital sexual partners (Carael et al., 1995), there is evidence of women under-reporting non-marital or non-regular sexual relationships (Carael et al., 1995; Konings et al., 1995).

It is acceptable, even expected, for Buganda males to have more than one sexual partner (Parkin, 1966; Roscoe, 1911), while women are expected to remain faithful to their husbands. In fact, a woman must not have more than one sexual partner, if she is to be considered morally good (Konings et al., 1995). Despite these cultural norms, both the FGDs and the literature suggest that there are stronger economic factors at play which are causing women to have more than one sexual partner (Lindan et al., 1991; McGrath et al., 1993). In addition to this, McGrath et al. (1993) found that it is informally acceptable for a woman to have several partners if her regular partner is either not satisfying her sexually, or if he is not supporting her economically.

These social and cultural norms may be responsible for the under-reporting of non-regular sexual partners by women. The test-retest reliability results show that the question on number of sexual partners is reliable, and that female responses are significantly more consistent than those of males. However,

given the strong socio-cultural pressures against women openly having many sexual partners, it is possible (and highly probable) that women are consistently under-reporting the number of sexual partners.

The perception, be it valid or not, of both girls and boys that the other is having more sexual partners than they are, is a meaningful indication of risk perception among these students. The perception that the members of the opposite sex, that is current and future sexual partners, are engaging in risky sexual behaviours (i.e., having many different partners) may have a real impact on that individual's perception of personal risk as well as on their adoption of risk reducing behaviours. In addition, there seems to be a perception among students that there are people who wish to maliciously infect others with HIV or STDs. Further research may be required in order to determine if these fears are valid. Regardless of their validity, however, these fears speak to the students' perceived personal risk of contracting HIV.

Other studies have found that the issue of a partner's risk reducing behaviour is important in the effect it has on an individual's risk perception (e.g., McGrath et al., 1993). The issue of risk perception and how it influences behaviour change will be discussed further in the section on *Behavioural Change within the ARRM Framework.*

The FGD findings confirmed the steady and significant increase in the number of sexual partners reported by secondary school students in the Kabarole District. As the number of sexual partners increases, so does the risk of HIV

infection, unless some other method (such as condom use) is introduced to reduce that risk. Asiimwe-Okiror et al. (1997) in a similar study of adolescents in Uganda, found no significant change in the number of sexual partners for either males or females, since 1991. This conflicting finding may be due to the fact that in their study, Asiimwe-Okiror et al. (1997) asked about the number of non-regular sexual partners as opposed to the total number of sexual partners, as was the case with the present questionnaire.

Differentiating between regular and non-regular sexual partners may not be as applicable to, or necessary for adolescents as it is to married couples, or individuals over the age of 20. For their work with adolescents, Asiimwe-Okiror et al. (1997) defined "regular" sexual partners as a partner of at least 12 months. By not differentiating between regular and non-regular sexual partners, the BHS questionnaire is assuming that adolescents only have non-regular sexual partners. Whether or not this is a legitimate assumption is something that requires further investigation.

Regardless of whether we are referring to regular or non-regular sexual partners, however, as the number of sexual partners increases, the risk of HIV infection will only increase if the numbers of partners with whom individuals are having unprotected sex also increases.

Condom Use

The FGD responses verify the results from the questionnaire that while a good portion of students are using condoms (65.1% of sexually active students have used a condom), there are still some that do not. The question on "ever use of a condom" had a higher reliability than "current" condom use. There is no evidence that the question on current condom use was misunderstood, or that students felt uncomfortable answering it. The discrepancy between responses for current condom use may not represent low reliability, but instead a change in behaviour during the time interval between the test and the retest questionnaires. It is possible that after having taken the questionnaire for the first time, students felt more encouraged to use a condom during their next sexual encounter(s), meaning that their response on the second questionnaire represents a positive change in their behaviour. If this were the case, it would substantiate the findings from the FGDs, that the questionnaire is an effective educational tool, eliciting short-term risk reducing behaviours in participants.

Female respondents reported a higher level of condom use for both "ever use" and "current use" than did the male respondents. Given that other studies have found that women consistently report using condoms less than men (Asiimwe-Okiror et al., 1997; MFEP, 1995), it is highly possible that women in this study are consistently over-reporting the use of condoms.

Another reason for us to believe that females are consistently, but inaccurately, reporting condom use is that it became clear in the FGDs that women still exercise very little control over their use. It is still uncommon for girls to buy or to have condoms; having the condom is still seen as the male's responsibility since he is the one who has to 'put it on'. Girls, therefore, may have been giving what the more socially desirable response for the researchers, thus over-reporting their use of condoms.

It is possible that the over-reporting of condom use by women resulted in the inflation of the overall reported condom use. However, the FGDs, supported by the literature, indicate that the reported increased condom use among secondary school students over the past four years in the Kabarole District is accurate. The trend in increased condom use among this age group has also been noted in other studies in Uganda (Asiimwe-Okiror, 1997; Konings et al., 1995).

Although the findings from the focus groups cannot be quantified in order to make them more comparable to the questionnaire results, they do provide insight into the factors influencing condom use in secondary school students, and what factors (if any) have changed to bring about the increased use over time.

The lack of acceptance of condoms as an effective way of preventing AIDS or STDs has been a common and recurring barrier to condom use in Uganda (Kamya et al., 1997). The belief that a condom can disappear inside a woman, for example, has existed since the onset of condom promotion campaigns (Forster et al., 1989). Based on the findings from the present study, as well as

those cited in the literature (e.g., Kamya et al., 1997), it is evident that these beliefs still exist today, not only among members of the general population but specifically among the secondary school students in the Kabarole District, specifically.

Like efficacy, enjoyment or satisfaction has also been a determinant of condom use since the very beginning of condom promotion campaigns. One of the most commonly heard responses in the FGDs as to why some students do not use condoms was, "because you cannot taste a sweet when the wrapper is still on". Similarly, in 1988, Forster et al. assessed the attitude of men towards condoms and found that enjoyment was a major issue in condom use, with one of the respondents stating that, "having sex with a condom is like eating a sweet with the wrapper on". The fact that such attitudes, summed up in a local idiom, are still present after more than ten years of active condom promotion is a testament to how difficult it is to overcome socio-cultural barriers in order to bring about behaviour change.

It has been acknowledged that knowing where to buy condoms, and how to use them correctly are both associated with increased condom use (Kamya et al., 1997). According to the students who participated in the focus groups, a lack of knowledge can still be a barrier to their use. This is by no means as much of a barrier as it was ten years ago, when Konde-Lule et al. (1989) reported that 87% of the general population did not know where to obtain a condom. In addition,

there was a great deal of suspicion, at that time, of condoms that were distributed free of charge (Forster et al., 1989).

Most of the students in this study were aware of where they could obtain condoms, and were not suspicious of the free distribution of condoms. The students did, however, display a clear preference for obtaining condoms from shops, which apparently offer a higher degree of privacy and confidentiality than health units, where they can be obtained freely but not as easily. In this case, their embarrassment does not come from them using a condom, but from the fact that it proves they are engaging in pre-marital sexual activities. It is evident that social norms surrounding adolescent sexuality still play an influential role in condom use in Uganda.

The focus group discussions indicated a clear link between how 'safe' an individual perceives his or her partner to be (i.e., the amount of trust they have in their partner), and condom use. This can encourage condom use, as in the case of an individual who perceives his or her partner as a risk. On the other hand, this also may discourage their use out of fear that the desire to use a condom (or to have a partner use a condom) will be interpreted as a sign of infidelity or distrust. As was discussed above, the ability of women to take an active role in having their partner use a condom is limited, and therefore might limit their own abilities to reduce their risk of infection.

It is clear that while some of the barriers to condom use still exist, the increased availability and accessibility of condoms, as well as a heightened

awareness of the risks associated with unprotected sex has resulted in increasing condom use among secondary school students in the Kabarole District.

HIV Testing

While the willingness to go for an HIV test is not a direct indicator of behaviour change, it is an insightful way of finding out about students' perceptions and attitudes towards HIV/AIDS. This, in turn, helps researchers to assess the likelihood of students labeling AIDS as an undesirable disease, one of the first steps towards adopting risk reducing behaviours, according to the ARRM approach (Catania et al., 1990).

Of the students who stated on the questionnaires that they had never been tested for HIV, 59.4% reported that they would be interested in having a test, if given a chance. The FGD results, on the other hand, reveal that most students would not be willing to go for an HIV test. The Kappa value for this question (0.682) is substantial. It is possible that the unreliability factor for this question is due to students changing their mind during the time interval between the questionnaires about having an HIV test. This question does not measure any particular behaviour, but instead the students' perceptions about a hypothetical situation, perhaps causing their opinion to vary from one time to another. However, since the Kappa value for this question is substantial, unreliabilty of

responses doesn't explain the discrepancy between the FGD responses and questionnaire results.

Another likely explanation for the discrepancy is that students are giving the most socially desirable answer. FGD participants expressed a number of reasons why they felt that most students would not be willing to go for an HIV test. These reasons, such as fear of being recognized and the uselessness of having a test, make it apparent that HIV/AIDS is still a highly stigmatized disease in Uganda.

AIDS has been a stigmatized disease since it was first reported in Uganda (Konde-Lule et al., 1989). Most students stated that if they found out they were HIV positive, they would not tell anyone about their status out of fear of rejection and stigmatization. Nduati and Kiai (1997) also found that such fears were responsible for the lack of partner notification by HIV positive adolescents. Students also didn't believe that AIDS was treatable or curable, which explains the uselessness they express with regard to testing for the disease and to partner notification. In fact, the hopelessness with which AIDS is associated in Ugandan society is illustrated by the number of students who expressed suicide as a response to AIDS, a response also seen in the literature (Nduati &Kiai, 1997). It is clear that not only are students very much aware of AIDS, but also that they perceive HIV/AIDS as highly undesirable, a key step to adopting risk reducing behaviours (Catania et al., 1990).

It is important to acknowledge that the students participating in the FGDs might not have wanted to admit that they thought young people would be interested in going for an HIV test. Even if questions were asked in a very non-personal way, in order to elicit indirect estimations of other students' behaviours, it is assumed that their responses will reflect not only what they have observed, but what they, themselves, would do. Since the FGD participants were from the same class, they might not have been open about such a question out of fear of what their response would say about them, and what their classmates would think of that response. The limitations of using focus group interviews as a method collecting information on sexual behaviour and attitudes is discussed further in the section on *Collecting Self-Reported Sexual Behaviours*.

Behavioural Change within the AIDS Risk Reduction Model

The AIDS Risk Reduction Model is the only model of determinants of behavioural risk reduction that has been applied specifically to HIV/AIDS. The variables the ARRM identifies as relevant to supporting behaviour change include: perception of the morbid event as problematic, perception of associated behaviour as problematic, knowledge of behaviours involved in disease transmission, perceived susceptibility, and perceived norms.

It is evident, based on the FGDs and on the questionnaire results, that secondary school students in the Kabarole District are very familiar with AIDS,

how it can be transmitted and how it can be prevented. Furthermore, AIDS is a highly stigmatized disease within this population. There is a definite perception among the majority of participants that AIDS is a deadly disease without treatment or cure, and that HIV infection is highly undesirable. In addition to this, both male and female students seem to perceive themselves as being at risk of HIV infection, mostly as a result of their partner's risky sexual behaviours. According to the present study, all the components for the first stage of behaviour change within the ARRM framework are present within secondary school students. However, the ARRM, along with many other health models, states that the desire for behaviour change is by no means a guarantee that it will take place, which brings us to the second stage of the ARRM, the commitment to change.

Weighing the costs and benefits of behaviour change and the individual's perceived self-efficacy towards achieving that behaviour change will not only influence whether or not they commit to change, but what behaviours they will commit to changing. Most of the evidence from this study supports the idea that the drop in HIV-prevalence within this age group is a result of increased condom use. Interestingly, most other studies examining HIV-related behaviour changes indicate that the reducing the number of sexual partners, or "sticking to one partner" is the most common response to reduce the risk of HIV infection (Lindan et al., 1991; McGrath et al., 1993; Sindiga et al., 1993).

For the present study, however, the evidence indicates that the number of sexual partners has clearly increased, rather than decreased. It is possible that the

trend in the number of sexual partners is misleading since it gives no indication as to the nature of these sexual partners (if they are regular or non-regular) (Assimwe-Okiror et al., 1997). On the other hand, there are strong social pressures on both males and females to become sexually active at a very young age, suggesting that the increasing trend is valid.

A strong case, based on socio-economic factors, can be made for women not to reduce the number of sexual partners. The economic cost of limiting the number of partners a woman may very well outweigh the benefits of changing this risky behaviour. Furthermore, there is a perception that even if a woman chose to decide to reduce their risk of HIV by "sticking to one partner", the efficacy of that decision would depend on her partner also adopting some risk reducing measure (Lindan et al., 1991; McGrath et al., 1993). Students clearly indicated that they do not have a high level of trust or faith in the opposite sex to also limit the number of sexual partners, thus possibly explaining why this risk-reducing strategy has not been adopted by this particular population.

While there are costs and benefits to using condoms, it seems that this has been the most commonly chosen risk-reducing strategy among secondary school students in the Kabarole District. A heightened awareness of the risks associated with unprotected sex, in conjunction with the increased availability and accessibility of condoms, and their perceived efficacy in reducing the risk of HIV infection, has facilitated the adoption of this risk reducing behaviour among secondary school students. Although the high proportion of women reporting

condom use appears to be encouraging at first, it is clear that the gender-norms within this society still do not place women in positions where they can effectively negotiate condom use. This is evidently an area requiring further attention both in research as well as in program development and policy making.

The ARRM proved to be a useful and effective way of studying and understanding sexual behaviours in the present study. In the case of adolescent sexual behaviours, however, determinants of sexual activity and of onset of sexual activity are important predicting indicators for HIV infection for this age group. The ARRM should, therefore, incorporate these predicting indicators into its framework when applied to the study of adolescent sexual behaviours, specifically.

Test-Retest and Focus Groups as Methods of Assessing Reliability and Validity

Test-Retest

The test-retest method helps researchers to measure the ability of a person to recall the past occurrence consistently (Saltzman et al., 1989). In the present study, test-retest was used to measure the reliability with which secondary school students reported sexual behaviours. It is assumed that since 15 to 19 year olds are the most recent members of the population to have become sexually active, they would have less difficulty accurately recalling sexual behaviours. This is mostly because they have had less sexual experience within a relatively short time

frame in which to recall those behaviours. A low reliability in the case of 15 to 19 years might, therefore, be due more to intentional under- or over-reporting of sexual behaviours than to inaccurate recall of those behaviours.

The time interval between the administration of the two sets of questionnaires during the test-retest can have an impact on the outcome of the study (Saltzman et al., 1989). A longer time interval, while minimizing recall bias from the first questionnaire, increases the chances that individuals will adopt new behaviours. In the present study, the seven to ten day interval was found to be appropriate for this age group. Actual behaviour change would have been a greater factor for a longer time interval, while a shorter time interval would have increased the chances that students recalling their responses on the first questionnaire.

Although all possible measures were taken to ensure that conditions during the test-retest were the same as when students completed the questionnaire earlier that year, the presence of a new and foreign researcher from Canada might have influenced their responses. In addition, the handing out of cards with numbers and the recording of those numbers onto the questionnaires (in order to facilitate the identification of a respondent's two completed questionnaires) resulted in some students feeling uneasy about the protection of their anonymity and might have affected their response.

Focus Group Discussions

Focus group discussions were used to assess the quality of the questionnaire and of the research model. In addition to this, they were used as a method of validating (by means of triangulation) sexual behaviours reported by secondary school students in the questionnaire.

In the first case, focus groups proved to be an effective method of obtaining feedback on the wording, the questions, as well as the students' perception of the research. The FGD pilots revealed that students were generally, and understandably, not inclined to admit to not understanding a particular word or question. This is why, in the rest of the FGDs, it was useful to ask the students to give their interpretation of specific terms thought to be causing some problems for students. In general, however, most of the FGD topics were not of a personal nature and did not deal with sensitive matters, probably explaining why the discussions were successful. Finally, students responded positively to the opportunity of giving feedback on the questionnaire, and appreciated being included in the research process. In retrospect, we would consider explicitly asking the FGD participants to give direct feedback on the results and trends observed by the questionnaire over the past years, and to comment on their accuracy. This has been found to be an effective method of testing results for accuracy and validity (Miles & Huberman, 1994).

While the focus groups conducted to validate the findings of the questionnaire were equally successful, they also had a considerable number of

limitations worth mentioning. Although the FGDs were a good way of obtaining indirect estimations of secondary school students' sexual behaviours, the responses were not quantifiable and thus were less comparable to the questionnaire findings. In light of this, we suggest that any further use of FGDs, as a means of triangulating data for validation purposes, be used in conjunction with a number of individual interviews. A number of in-depth individual interviews would allow researchers to compare quantifiable information, as well as to obtain the more contextual picture surrounding sexual behaviours.

Collecting Self-Reported Sexual Behaviours: Questionnaires vs. Focus Group Discussions

Self-Administered Questionnaires

Self-administered questionnaires, such as the one in this study, provide a fast, logistically easy, inexpensive way of collecting self-reported behaviours within a relatively large sample size. In this case, they are easily used to monitor trends in sexual behaviours in secondary school students. The anonymity and privacy they provide to respondents (students) is also important when examining the quality of the data collected. One FGD participant stated that many students would prefer to write about their sexual behaviours than tell someone about them, indicating that students might feel more comfortable revealing personal information concerning their sexual lives on a questionnaire than during a focus group interview.

On the other hand, questionnaires are limited in the number and scope of questions that may be included, compromising the richness of the data collected. Questionnaires are, therefore, an effective way of collecting basic information on sexual behaviours, but other methods are required to elaborate on those findings and provide a more contextual understanding of their meaning and implications.

Focus Group Discussions

Focus group discussions involve gathering the thoughts and opinions of a group of participants who share some common trait or interest on a specific topic, by means of a guided discussion. In the case of sexual behaviours, focus groups are limited to asking participants to give their 'impressions' or their indirect observations of others' sexual behaviours. However, researchers assume that responses will be based on what participants know about themselves, what they know about their friends, as well as what they have observed around them. In this way, FGDs are an effective tool for elaborating on our understanding of certain sexual behaviours and trends. In addition, they provide a contextual understanding of behaviours as well as a broad range of insights into the factors and motivations behind specific behaviours.

One of the major drawbacks to the use of focus groups in the study of sexual behaviours, however, is that they provide much less anonymity than a questionnaire or even an individual interview. Not only may respondents worry about what the interviewer or moderator will think of their response, but also what

the other participants in the group will think of, and interpret from their responses. Even in a room full of strangers, this would be enough to make even the most outspoken person think twice about if and how they should express their opinion(s). This proved to be one of the major limitations of using FGDs to obtain information on sexual behaviours within the context of the present study.

For logistic reasons, students who participated in the FGDs were randomly selected from the same class. FGD participants were therefore classmates, which not only made confidentiality of responses more of an issue than if they had been strangers, but also added to the already complex group dynamic. FGD topics were designed to allow students to give only indirect estimations and observations of sexual behaviours. In spite of this, however, it is very likely that students' responses were filtered or modified, depending on what they thought other participants would think of, and how they would react to their response (both during the discussion and after the researchers had left).

As was mentioned previously, this might have been an issue for the more sensitive questions concerning HIV testing. This was also illustrated in rural schools, where participants were encouraged by the facilitators to express themselves in the local language (Rutoro) if it made them feel more comfortable, despite the fact that speaking the local language is strongly discouraged within the schools. It became evident, however, that despite the assurance of the facilitators that speaking Rutoro would be alright, most students would not if there was a

class leader (or 'prefect') present in the group, out of fear that they would be reported back to school officials for having spoken Rutoro.

In the future, it is strongly suggested that efforts be made to ensure that FGD participants do not know each other, and have limited chances of ever knowing each other after the discussion. This represents a major factor in ensuring the highest level of confidentiality for the participants, thereby encouraging the most open and honest responses from participants, particularly when discussing something as sensitive in nature as sexual behaviours.

Finally, a dynamic discussion where students were interacting and exchanging differing views and opinions on sexual behaviours was only achieved in a few of the focus groups. This was probably due to the highly sensitive nature of the topic being discussed. In addition to this, it is considered inappropriate in Uganda to openly disagree with someone, particularly in the presence of guests or strangers. This issue should be taken into consideration in future research.

The 'Muzungu' Effect

As researchers, it is incumbent upon us to identify and acknowledge our own biases and limitations we bring to any given study. In my case, I was a 23

year-old '*muzungu*'[3] woman from Canada studying Public Health Sciences, and with a background in the Biological Sciences. I set out for Uganda, never having been to Africa before, knowing only as much as I had read about it, to carry out the fieldwork for my Masters thesis. Both my inexperience conducting field research as well as my limited knowledge of the study setting and participants had a significant impact on all aspects of the research, from the data collection to the data analysis. I was aware of the difficulties associated with cross-cultural research before beginning the research, but the extent to which I underestimated how important a role those barriers would play still astounds me.

The first school I ever visited over the course of my fieldwork was a rural school, tucked away in the picturesque foothills of the Rwenzori Mountains. As my research associate was unavailable, I decided to go on my own to administer the first round of test-retest questionnaires. As the Head Master led me into the classroom, all the students began clapping as I entered the room. They looked thrilled, and I felt terribly embarrassed and uncomfortable. I tried to impress them with the few phrases in Rutoro I had mastered by then (not knowing that Rutoro was strongly discouraged within the school). I even introduced myself by my 'empako'[4] in an effort to make them think, and make myself feel like I was

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[3] 'Muzungu' is the Khiswahili word for 'traveller', but has become known through most of East Africa as the translation for white person.

[4] An 'empako' is a pet name given to someone, and is a cultural tradition among the Batoro. It is customary that everyone is given one at birth, or to a foreigner.

less of an outsider than I appeared to be, or that I really was. As I was handing out the questionnaires, I heard a snap and saw a flash out of the corner of my eye. One of the students had taken a picture of me, while I was not looking. I tried, but could not hide the shock that I felt. After a few seconds passed, however, shock turned into amusement and I agreed to take part in a picture taking session, whereby the majority of the class lined up to have their picture taken with me.

I learned two things from that very eventful first day in the field: (1) never go to a school without bringing my own camera along, and (2) no matter how hard I tried to hide it, or make it less important for the purposes of the research, the students would never see me as anything other than I really was, and they would never let me forget that.

This was an important lesson as a researcher, and I consider myself fortunate that it came so soon into the fieldwork. What I learned that first day in the field stayed with me during the remainder of the study, and I relied heavily on the input of the research team I had assembled for every component of the study. It is important that all researchers, but especially those of us who choose to work cross-culturally, make their research (from the planning of the questions to collecting and analyzing the data) sensitive to the needs of the study community or population. It is also important to acknowledge, at the outset, that it is impossible for us to know everything about a certain culture or community. Instead, we are to make the commitment of being open to learning on an ongoing basis and to constantly incorporate what we learn into the research process, re-

assessing and re-evaluating the appropriateness and sensitivity of the research every step of the way.

Study Strengths and Limitations

The limitations associated with focus group discussions and surveys as validation techniques and methods of collecting sexual behaviours, as well as the limitations and challenges of conducting cross-cultural research have already been discussed. The broader limitations of this study, however, are worth mentioning.

The fact that the present study only looks at sexual behaviours of adolescents enrolled in secondary school is considered a limitation. In order to have a better understanding of the declining HIV prevalence in the 15 to 19 year old age group, information on the sexual behaviours of out of school youth (who make up over 50% of this age group) should also be explored. In addition to this, the limited participation of S4s in the FGDs on sexual behaviours may have resulted in their points of view being under-represented.

Another limitation of this study is that the presence of a graduate researcher from another country coming to evaluate the validity and reliability of a questionnaire might have unwittingly elevated the questionnaire's credibility. Students' perceptions of the questionnaire might have improved if they perceived it as being "worthy" of being studied by foreign researchers.

The presence of a foreign researcher, however, may have been both a limitation and strength in the present study. The principal investigator tried to "detach" herself from the Basic Health Services, and from the questionnaire, in order for students to perceive the research team as independent and objective evaluators with whom they could be honest and critical without any fear or apprehension.

The Inter-rater validity of the coding for the focus group responses was 84.5%. This value is evidence that response coding for the focus group discussions was done rigorously and systematically.

By far, the present study's greatest strength and what is responsible for the quality of data obtained is the very talented research associates, and particularly the focus group facilitators, who worked on the study. Their experience working with adolescents, as well as with facilitating focus groups enabled the FGD facilitators to approach the topics with sensitivity, fostering a safe environment in which students felt comfortable expressing their views openly and honestly.

Validity and Reliability of the Questionnaire

The self-administered questionnaire used to monitor sexual behaviours of secondary school students in the Kabarole District, was found to be an effective tool to obtain reliable and generally valid information on sexual behaviours among this population. The questionnaire is clearly an essential part of the HIV prevention program, and should continue to be used not only in providing insight into changing HIV trends, but also in guiding reproductive health initiatives for this age group. This study, however, identified several present and potential threats to the reliability of the instrument, as well as to the validity of its findings. These threats to validity should be addressed in order to improve the questionnaire as well as the quality of the information being collected.

Recommendations

- Clarification of specific terms such as 'health institution', 'discharge', 'traditional healer' and 'ulcer', by giving concrete examples of what is meant by such terms (and what is not meant).

- In order to ensure sustainability of the research, the BHS team must begin to explicitly address the needs of the research population. This does not

necessarily mean implementing new programs (requiring large amounts of funding), but instead could be as simple as a shift in the research approach. Adopting more of a participatory action research approach, involving the students in more than just the collection of information would not only make the research more sustainable, but also probably more valid and meaningful. Another way of ensuring sustainability of the research is to capitalize on the questionnaire's perceived usefulness as an educational tool. For example, information sheets with pertinent information about reproductive health or listing the programs and services available to students could be attached to the questionnaire. This would not only make students feel like they were getting something in return for their participation, it would also address the tremendous need for more reproductive health information dissemination to these students.

- Further investigation is required to determine whether or not this questionnaire should differentiate between regular and non-regular sexual partners. Since the study population consists of adolescents, there is some question as to the appropriateness of making that distinction. The assumption, however, that adolescents only have non-regular sexual partners may or may not be a legitimate one, and warrants further research.

Behavioural Change in Secondary School Students

The FGDs validated the trends generated by the questionnaire since 1994, confirming that the declining HIV prevalence within this age group is mainly due to increased condom use, rather than to any other behavioural changes. The ARRM was, in general, found to be a useful and appropriate framework for the study of HIV-related sexual behaviours. For adolescents, however, this framework could be adapted in order to give more consideration to the determinants of sexual activity within this age group, as well as to the onset of sexual activity, since these are predictors of HIV infection more specific to this population.

Recommendations

- Since condom use is the most common risk-reducing strategy among secondary school students in the Kabarole District, measures should be taken to ensure that condoms are, and continue to be, available and accessible to these students. Furthermore, ensuring that all students have easy access to anonymous condom sources should be a priority. In addition to this, more attention must be paid, in research as well as in program development and policy making, to women's roles in condom use and how they can be empowered to take more of an active role in determining and negotiating their use. One option, which the BHS might want to explore, is the female

condom: how they can raise women's awareness about it, as well as how they can make it more accessible and available to women in the district.

- Future research should focus on ways of gaining a better understanding of the factors surrounding other risk-reducing behaviours, and identifying the reasons why they are not being as readily adopted by this population. This information will strengthen HIV prevention programs, helping them to work towards breaking down existing barriers to the adoption of other risk-reducing behaviours, such as delaying the onset of sexual activity or reducing the number of partners. As this study has clearly shown, many of these barriers are very much related to the social norms and economic realities faced by most students. While these realities are something the Ugandan government should be aware of, and should work towards improving, it is clear that the problem of poverty, for instance, is not something that the Ugandan government can deal with easily, or single-handedly.

- The Basic Health Services Project should consider incorporating out-of-school youth into their sexual behavioural monitoring program, possibly through an interviewer-administered short questionnaire, or a self-administered questionnaire such as the one used for secondary school students.

AIDS as a Stigmatized Disease in Uganda

Although the present study did not set out to assess the perception of AIDS among secondary school students of the Kabarole District, the findings indicate that AIDS/HIV is still a very stigmatized disease in Uganda. The findings that most students would not go for an HIV test (if given the chance), and also that most would not notify their partners if they were HIV positive have serious implications for preventing the spread of the disease. HIV testing should be about more than just tracking the trend; it should be an essential component of HIV prevention (i.e., someone who tests positive will notify their partner(s), and protect them from being infected). This aspect of HIV prevention is presently not effective within this study population.

Recommendations

- Further research should focus on identifying and understanding the barriers to partner notification, as well as to identifying effective and culturally sensitive ways of overcoming these barriers.

- Measures should be adopted to ensure that all HIV positive individuals receive counseling on partner notification, as well as on how to deal with being positive (e.g. making them aware of the treatment and support programs available to them).

- HIV prevention initiatives must continue to work towards breaking down the socio-cultural stigmas associated with HIV/AIDS.

Assessing Validity and Reliability of Self-Reported Sexual Behaviours

The test-retest and focus group discussion methods were found to be effective ways of assessing the validity and the reliability of self-reported behaviours in secondary school students. This study adds to the growing body of literature affirming the value of using quantitative and qualitative methodologies in a complimentary and multi-method approach.

Recommendations

- In addition to FGDs, students should be given the opportunity to directly comment on the accuracy and validity of the questionnaire results and observed trends.

- For FGDs dealing with sensitive topics steps should be taken to minimize the likelihood that study participants know each other (e.g. classmates) prior to the discussion. The relationship that participants have with each other outside of the FGD setting is likely to influence the participants' responses, as well as the general dynamic of the group.

- In addition to the focus groups discussions, in-depth individual interviews should be incorporated into the qualitative component of a validation study. These can be more easily quantified, therefore making them more comparable to questionnaire results, while providing the contextual explanations behind the quantitative values.

- Focus group discussions and in-depth individual interviews, in addition to the questionnaire, would require far too much time and resources to be conducted annually. However, it is recommended that a periodic validity assessment be carried out every four or five years by the BHS project, in order to monitor the validity and reliability of self-reported sexual behaviours on a regular (every two to three years) and long-term basis.

- Finally, it is recommended that the Basic Health Services adopt and incorporate validity assessments into new and on-going research projects, particularly in studies dealing with self-reported behaviours.

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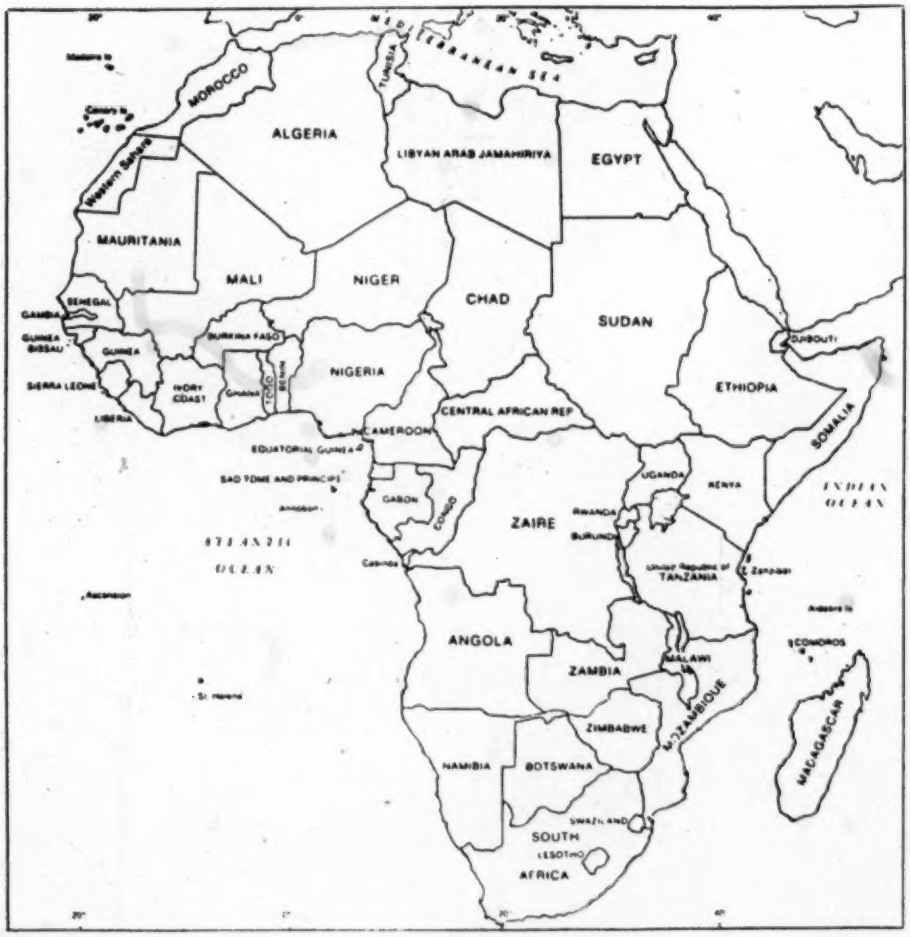
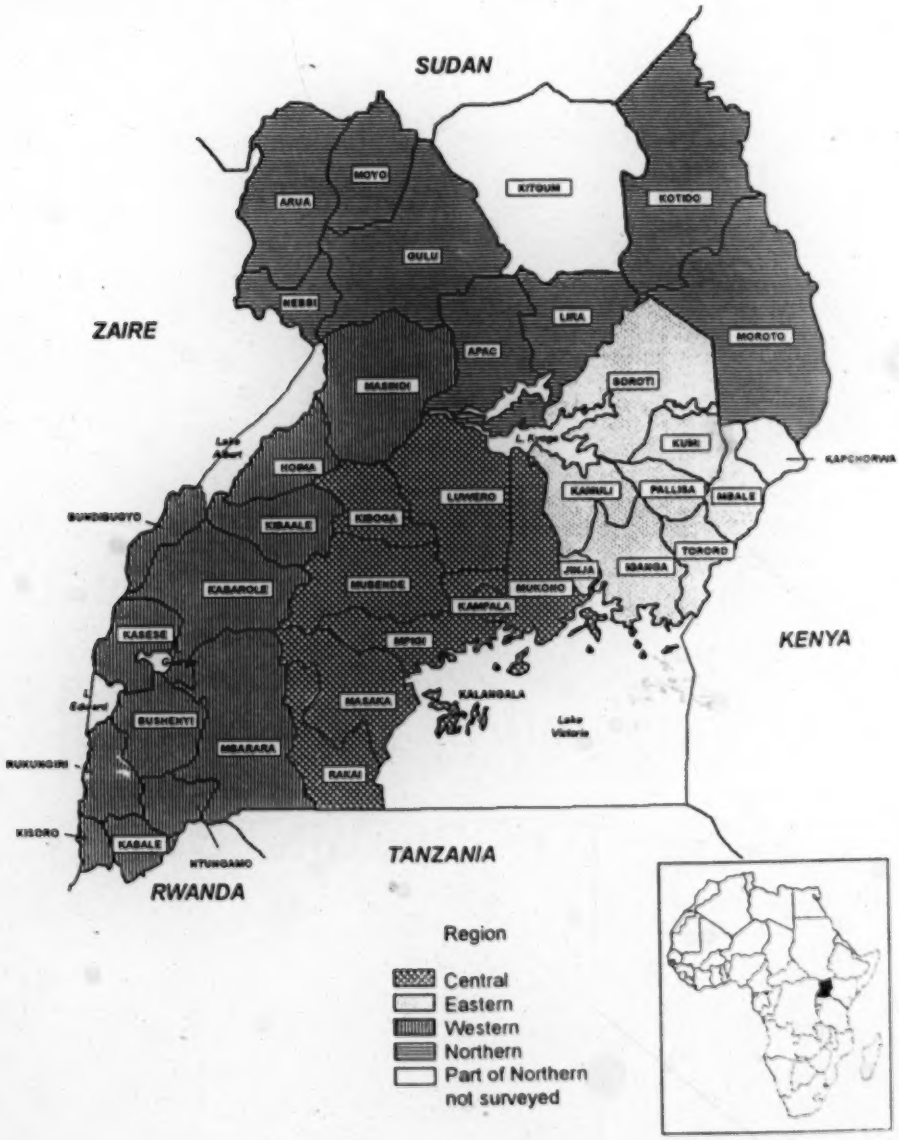
Appendix A: Map of Africa



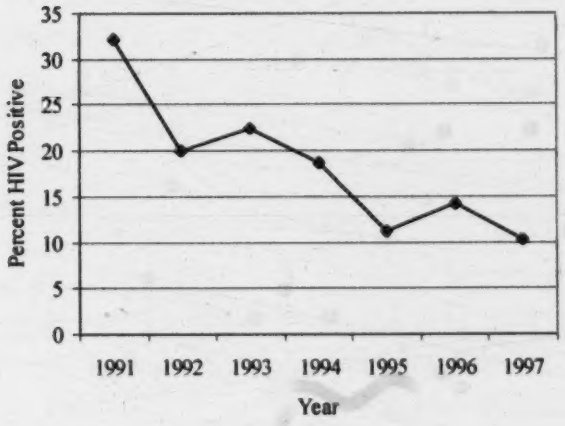
Appendix B: Map of Uganda



Appendix C:

HIV prevalence among 15 to 19 age group, in the Kabarole District

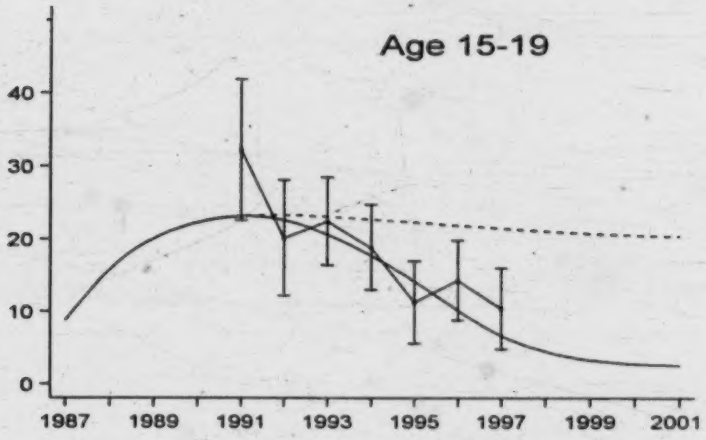
Trends in HIV-1 prevalence among ANC attenders in the 15-19 year age group, in Fort Portal, Uganda from 1991-1997.



Appendix D:

Mathematical Model of HIV Trend with and without Behaviour Change

HIV sentinel surveillance in pregnant women in Fort Portal, 1991-1997. Dashed line: model predicting prevalence without behavioural change, solid line: model including behavioural change, observed data (adjusted for education and marital status changes over time) with confidence intervals. (Killian et al., 1999)



Appendix E: Self-Administered Sexual Behaviour Questionnaire

The District Health Team is again conducting its periodic survey among students in S2-4.
Your class was chosen in our random sample. We would like to ask you to answer a few questions about prevention of sexually transmitted diseases and your sexual life. Please note that participation is strictly voluntary. There will be no negative consequences if you choose not to answer. However, your answers may help us to plan and organize appropriate programmes for young people in this district.

This questionnaire is anonymous i.e. you should not write your name anywhere on the sheet. All information will be handled with absolute confidentiality.

This is not a test or an exam where you can score. Therefore, please answer the questions seriously and honestly. You begin on top of the first page and continue in order of the questions. Follow the instructions on the questionnaire. Please use ticks (✓) to mark YES/NO questions.

If you have finished all eight questions please hand in your sheet to the supervisor.

Thank you very much for your cooperation

This space is to be filled by the supervisor

Name of supervisor: _____

Date of interview:_____

Name of School:_____ S2( ), S3( ), S4( )

Signature:_____

You can give more than one answer if appropriate!

If you are S3 or S4: have you answered this questionnaire last year? YES ( ) NO ( )

Information about the respondent:

Sex: Male ( ), Female ( )
if you are female: have you ever born a child: YES ( ); NO ( )
Age: _____ years

Question 1:
Which methods can be used to prevent sexually transmitted diseases (STD's)?
_____
_____
_____
_____

Question 2:
Have you ever had sexual intercourse? YES ( ); NO ( )
- If "NO": continue with question No. 4
- If "YES": How many different partners did you have so far: ____ partners
  How old were you when you had sexual intercourse for the first time?___years
  Did you have sex in the last 3 months? YES ( ); NO ( )

Question 3:
Have you or your partner ever used condoms? YES ( ); NO( )
- If "NO": continue with question No. 4
- If "YES":
  Did you or your partner use condoms at your last sexual intercourse? YES( ); NO( )
  Why did you or your partner use condoms:
  To prevent a pregnancy YES ( ); NO( )
  To prevent AIDS YES ( ); NO( )
  To prevent a STD YES ( ); NO( )
  Other reason (please name): _____

Question 4:
a) Have you ever had an HIV-test? YES ( ); NO ( )

b) If there was a chance, would you be interested in having an HIV-test? YES ( ); NO( )

c)For what reason would you have an HIV-test?
_____

Question 5:
Did you have any disease on your private parts in the last 12 months?
YES ( ); NO( ); DON'T REMEMBER ( )

☛ If "NO" or "DON'T REMEMBER", continue with question No. 6
☛ If "YES", what kind of disease?
Discharge ( ); painful ulcers ( ); painless ulcers ( );
other_____
Was the disease treated by a
Health institution ( )
Traditional healer ( )
Self treatment ( )
No treatment ( )
What else did you do to treat the disease? _____

Did you inform your partner of your disease? YES ( ); NO ( )
Was your partner also treated? YES ( ); NO ( ); DON'T KNOW ( )

Question 6:
Did you or your partner ever use any method to prevent pregnancy? YES ( ) ; NO ( )

☞ if "YES": which method (please name):

_____
_____
_____

☞ If "NO": why did you not use any method? (please explain):

_____
_____
_____

Question 7:
If you need a condom tomorrow, where will you get it from?:

_____
_____
_____
_____

Appendix F: Trends in Sexual Behaviours

Figure F1. Level of Sexual Activity reported by secondary school students in the Kabarole District, Uganda.

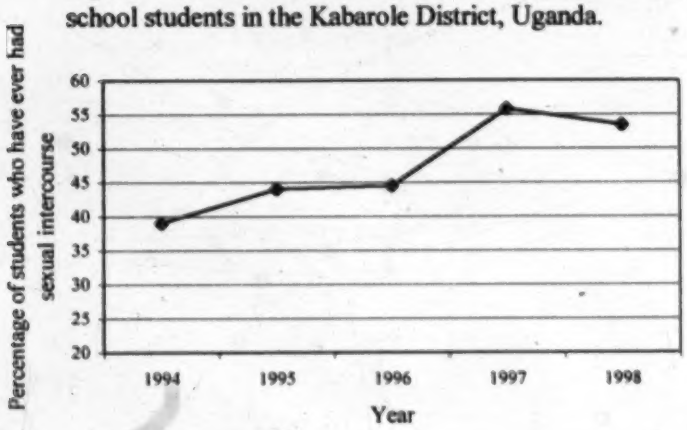


Figure F2. Trend in Number of Sexual Partners as reported by Secondary School Students in the Kabarole District, Uganda.

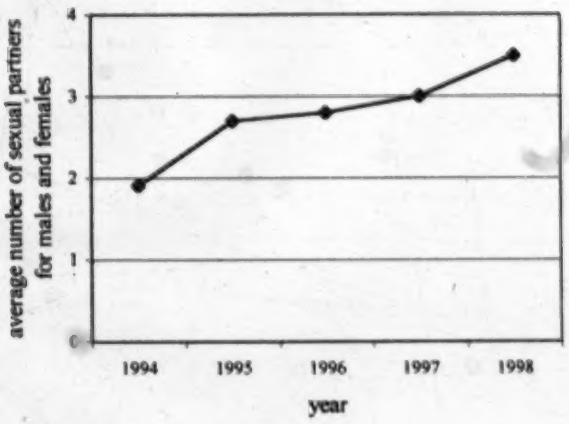


Figure F3. Trend in age at first sexual intercourse for secondary school students, Kabarole District, Uganda.

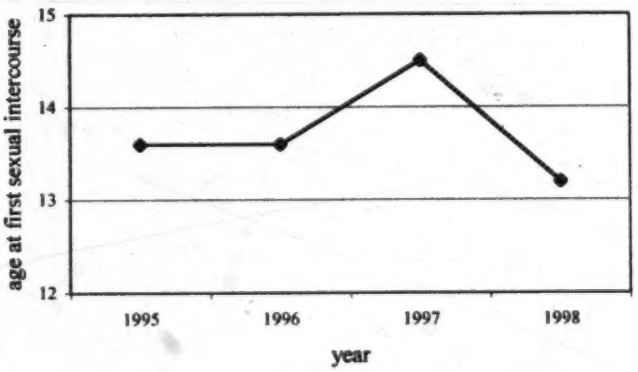
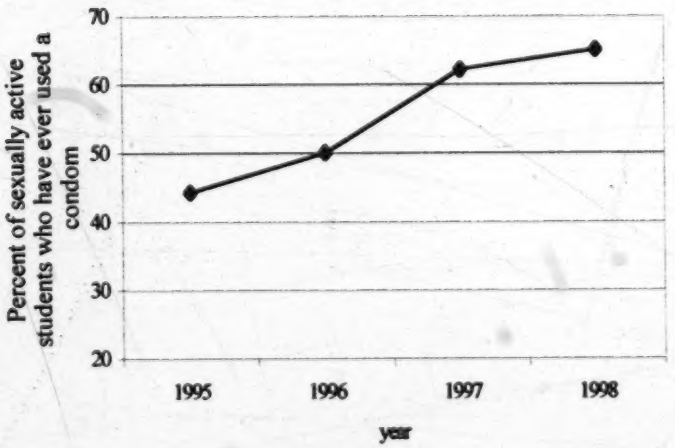


Figure F4. Trend in condom use in secondary school students from the Kabarole District, Uganda.



Appendix G: Consent

Information Sheet – Test-Retest Questionnaire

Hello, I am a student from the University of Alberta (in Canada), and I am in Uganda to work with the District Health Team of the Kabarole District. We want to find out if the questionnaire that they are using to ask you about the prevention of sexually transmitted diseases as well as about your sexual life, is working properly. It is very important to have a good questionnaire so students, like yourselves, can tell us about your needs and your concerns relating to sexuality and STD prevention. By participating in this study, you can help us to improve the STD prevention and education programs for young people in this district.

We are asking you to answer this short questionnaire about the prevention of sexually transmitted diseases and your sexual life. **Your participation is strictly voluntary**. You are free to refuse to fill out the survey, or any of the questions in the survey without any negative consequences.

Do not write your name anywhere on the questionnaire. Your answers will be completely anonymous. No one will be able to trace your answers back to you. Your parents and teachers will not see your answers.

You are being asked to participate in a very important study, so please answer the questions seriously and honestly. This is not a test or an exam where you can score, so there are no right and wrong answers. You begin on top of the first page and continue in order of the questions. Follow the instructions on the questionnaire. Please use ticks (✓) to mark YES/NO questions.

When you have finished with the questionnaire, please raise your hand, and the supervisor will collect your questionnaire from you.

Thank you very much for your co-operation.

This space is to be filled by the supervisor

Name of supervisor: _____

Date of interview: _____

Name of school: _____ S2( ), S3( ), S4( )

Signature: _____

Information Sheet for FGDs on Questionnaire Feedback

Dear Student,

We are researchers who are working with the Basic Health Services, here in the Kabarole District, to help them find out if the questionnaire they are using every year to learn about sexual behaviours in secondary school students is useful.

Since you are the ones who fill out the questionnaire, you are the best ones to tell us if it is useful and how we can make it better for the next years. We would like to have a focus group discussion, where you can tell us openly and honestly what you thought about the questionnaire. We want to hear all that you have to say, so all of your comments, whether they are positive or negative, are welcomed.

The discussions will be tape recorded and later transcribed (your words from the tape will be put onto paper). You can be certain that all your answers will be anonymous, and that nobody will be able to trace your responses back to you. The other participants in the group, will hear what you have to say, so we will ask all participants to be respectful of the other's privacy and right to confidentiality.

Your participation is voluntary. You do not have to answer any questions that you don't want to and you can withdraw from the discussion at any time, without there being any adverse consequences.

Thank you very much for your co-operation!

Information Sheet for FGDs on Sexual Behaviours

Dear student,

We are researchers who work with adolescents and youth to help them deal with issues of sexuality and reproductive health. This study is part of a research project, being carried out by a Master's student at the University of Alberta, Canada.

We would like to ask you some questions about Sexually Transmitted Diseases and your sexual life. If you agree to talk openly and honestly with us, you will help us to improve the health education programs for adolescents, in the district.

The discussions will be tape recorded and later transcribed (your words from the tape will be put onto paper). You can be certain that all your answers will be anonymous, and that nobody will be able to trace your responses back to you. The other participants in the group will hear what you have to say, so we will ask all participants to be respectful of the other's privacy and right to confidentiality.

Your participation is voluntary. There might be some questions that make you feel shy or uncomfortable, so you do not have to answer any questions that you don't want to. You can also withdraw from the discussion at any time, without there being any adverse consequences. But we will not judge you on any of your responses, we are just here to listen and we value anything you have to share with us.

Thank you very much for your co-operation!

Example of letter sent to Head Masters

Dear Sir or Madam:

The Basic Health Services for the Kabarole District, in collaboration with the University of Alberta and the Canadian International Development Agency, is conducting a study for which your school has been selected. The purpose of the study is to assess the validity of the findings from the self-administered questionnaire used to monitor knowledge and behaviour relating to HIV and STD prevention among secondary school students in this District. Your school was among those who participated in the self-administered questionnaire earlier this year, and we are asking for your co-operation with this follow-up validation study.

This study has received ethical clearance from the Health Research Ethics Committee of the University of Alberta and Capital Health Region (Edmonton, Canada). It has been approved and is supported by the District Medical Officer, the District Education Officer and the Project Team Leader for Basic Health Services (Kabarole District). Please find attached a summary of the study proposal and timeline, as well as an outline detailing what type of commitment we will need from your school specifically.

Please rest assured that all the necessary steps will be taken in order to protect your students' as well as your school's anonymity. The results of the study will be made available to the Basic Health Services as well as to the schools participating in the study.

Do not hesitate to contact any of the members involved in this study should you have any questions or concerns. We look forward to hearing from you and we thank you for your time and for your co-operation on this project.

Best Regards,

Hélène O'Connor
Public Health Sciences, University of Alberta

Cc: Dr. B. Ndyanabangi (Reproductive Health Coordinator, GTZ-Basic Health Services)
Dr. G Kabagambe (District Medical Officer)
Mr. C B Mbanzabugabo (District Education Officer)
Mr. T Rubaale (Project Team Leader, Basic Health Services)

Appendix H: Research Team Training

Focus Groups and Interviews – How to get the best data

In order to ensure that the data collected is of the **highest quality**, it is essential that the researchers take appropriate steps throughout each phase of the data collection.

Before going out into the field, a researcher should:

- Fully understand the objectives of the study and take care not to lose sight of the research question while collecting the data;
- Be aware of the policy on confidentiality for the particular study, and strictly respect this policy;
- Fully acknowledge that each researcher has his/her own biases. Be aware of what these are (eg. culture, age, gender, socio-economic background) and what impact they could have on the results obtained;
- Realise that the participants are **giving** you something of themselves, and that what they decide to give depends on how much they feel they can trust you.
- Do not think of yourself as the expert, but as the student (you will hear a lot more that way!)

During the data collection (focus groups and interviews) the researcher should:

- Make the participants feel comfortable and at ease;
- Indicate, from the beginning that we (the researchers) will be doing more of the listening than the talking;
- Guide the discussion using the questions and topics prepared, but be flexible (topics and themes may come up in a different order than you

have prepared on your sheet, so be prepared to adapt and to change course accordingly);

- Know how and to what extent questions may be clarified;
- Understand which questions they should probe and how;
- Pay close attention to the relationship and interaction between participants;
- Take notes meticulously, systematically and in a way that is consistent with the system established by the research team;
- Do more than just hear what is said: **Listen, Process** and **React** to what is said – this means being fully alert and aware so that you can read between the lines, interpret body language, and listen to what ISN'T being said;
- **Do not lose sight of the research question!!**

After the data collection (focus group or interview), the researcher should:

- Catch your breath!
- Reflect on how the interview / focus group went (over all impressions) – discuss with fellow researcher(s);
- Acknowledge what went **right**, and make note of it for next time;
- Acknowledge what went **wrong** and make note of how to improve it for the next time (this is a good time to work on improving the probes and follow up questions, to be better prepared for the next interview or focus group);
- Make final notes;
- Share your experience and what you have learned with your fellow researchers!

Checklist for Focus Group Moderators:

- Is the setting adequate and will it allow an open and productive focus group discussion? (privacy, possible distractions, are participants comfortable, etc…) – make note of it.

- Make note of how your are feeling that day – tired, stressed, etc…(anything that could have an effect on how you react during the focus group discussion – be honest with yourself…it makes for better research).

- The moderator should make the participants feel comfortable, and (to the extent that it is possible) establish a mutual trusting rapport with the participants?

- Observe the interaction between the participants – take note of any participants who are being very quiet or shy and make a point of involving them in the discussion.

- Were most of the questions answered by the participants – most of the topics covered? (If you have skipped from one topic to another, make sure that you return to check that **all** questions have been asked and all topics have been covered).

- After the focus group, discuss how the focus group went with the note taker – did you notice similar or different things? Give each other feedback, and how you could do things differently or better the next time.

Checklist for Focus Group Note Takers:

- Make sure the setting is adequate to accommodate the focus group discussion (so that everyone will get a chance to hear what the moderator and the other participants are saying);

- Make sure that the recording equipment is in order (batteries, tapes…) – do a test before the focus group begins, to be sure. Place the tape recorder in the place you believe it will pick up the best sound quality, but where it does not become a distraction.

- Make yourself comfortable in a place where you will be able to observe the focus group discussions, without bringing much attention to yourself.

- Pay close attention to the focus group discussion and take notes carefully, following the guide established by the research team.

- After the focus group, discuss how the focus group discussion went with the moderator – did he/she notice similar or different things than you? What could you add to your notes to make them more complete?

- (Others? …)

Appendix I: Focus Group Topics

Focus Group Discussion Topics – Questionnaire Feedback (Pre-Pilot)

1. The first time you filled out the questionnaire, did the people who handed out the questionnaire clearly explain why they wanted you to fill it out?

2. Did they explain what they were going to do with your answers?

3. Did you feel that your answers would be kept anonymous? (that your parents, teachers or friends would not see your answers).

4. Did you think the questionnaire was easy to fill out?

5. Do you remember if there were any words that you didn't understand?

6. Were there any questions in the questionnaire that you didn't understand?

7. What did you think was meant by…a certain question (to be determined)?

8. What did you think was meant by…a certain word (to be determined)?

9. How would you change the questionnaire so that it would be easier to fill out?

10. If you were making up a questionnaire to learn more about sexual behaviours in secondary school students, what kind of questions do you think would be important to include? (like the ones in the questionnaire and/or different than the ones in the questionnaire).

11. Do you think that these questionnaires are very useful? In what way are they useful or not useful?

Focus Group Discussion Topics – Sexual Behaviour (Pre-Pilot)

1. Do you think a lot of people in your class are sexually active?
2. Do you think it is common for girls/boys to have more than one sexual partner?
3. How many sexual partners do you think a girl/boy your age has had (average)?
4. Do girls/boys your age use condoms?
5. Who is supposed to be in charge of using condoms?
6. Where do they get them from?
7. If you thought you might have a disease on your private parts (STD) where would you go for help? Why?
8. What kind of help would you expect to get?
9. If you thought you might have HIV, would you have an HIV test? Why? Why not?
10. If you found out that you had HIV, would you tell your partner(s)? Would you tell your friends and family?

Focus Group Discussion Topics – (Post Pilot)

Questionnaire Design / Format

1. Did you think the questionnaire was easy to fill out? (Overall impressions)
   Probe: Too long? Difficult to read or follow? Did you like the way it looks? Probe: did you understand the questions where they asked you to skip to a certain question?

2. Were there any words that you didn't understand? Probe: What do they think is meant by 'health institutions' – (question #5). What about 'traditional healer'? What do you think the word 'discharge' means? What about the word 'ulcer'?

3. Were there any questions that you did not answer (left blank)? Was it because they were not clear / you didn't understand what they were asking/ or you did not know how to answer?

4. Did you leave any questions blank because you felt uncomfortable answering it?

Perceived Usefulness and Purpose of Questionnaire:

5. When you filled out the questionnaire (this time and the other times that you can remember), did you feel like your answers would be kept anonymous? (That your parents, teachers or friends would not see your answers). What made you feel this way?

6. Why do you think those who were taking your answers wanted you to fill out this questionnaire?

7. What do you thing they (those who took your answers) are going to do with your answers?

8. Do you think that these questionnaires are very useful? In what way or they useful or not useful (to you or to other students)?

How would they improve the questionnaire?

9. How would you change the questionnaire so that it would be easier to fill out? (more/less questions, questions worded differently, different format)

10. If you were making up a questionnaire to learn more about sexual behaviours in secondary school students, what kind of questions do you think would be important to include? (similar to the ones in the questionnaire and/or different than the ones in the questionnaire).

Focus Group Discussion Topics – Sexual Behaviours (Post-Pilot)

Starters / Ice Breakers:

Maybe you could share with us what your dreams are – where you would like to be, and what you would like to be doing ten years from now?

What do students mostly talk about? Probe: what about friends and relationships? Intimate relationships?

Sexuality:

1. How often do girls / boys of your age talk about relationships - and with who?

2. Based on what you know from talking with other adolescents, do you think there are a lot of people your age having sex? Probes: What factors are influencing them to have sex? Are the reasons different for boys and girls? Do young boys/girls feel pressure to have sex?

3. Is it common for girls to have more than one boyfriend (that they have sex with)?

4. Is it common for boys to have more than one girlfriend (that they have sex with)?

5. At what age do most people, here at your school, have sex for the first time? Probe: Is it different for boys and girls? How many boyfriends / girlfriends (partners) do you think a girl / boy, of your age, has had (on average) between that time (first sexual intercourse) and now.

6. Can there be some consequences to having more than one boyfriend / girlfriend? Probe: what are they....do they include STDs?

Condom use and HIV & STD Prevention (knowledge and behaviour):

7. Do you know of any diseases that you can get from having sex? Probe: which ones?

8. Can we make a list of which methods can be used to prevent sexually transmitted diseases (STDs)?

9. Do girls / boys of your age use condoms?

10. Can we make a list of all the reasons why people of your age use condoms? Probe: if they say they use condoms to "prevent pregnancy", ask if condoms are the preferred method, or are there other "better" methods that they would rather use?

11. Who takes the responsibility of having the condom when you want to have sex? Probe: Is it the girls or the boys? Why?

12. Where do people your age get condoms? Probe: What makes them go there? Is it different for girls and boys? In what way is it different?

Break

Services, Treatment, and Partner Notification:

13. If a boy or girl of your age thought they might have a disease on their private parts (or HIV) who would they talk to first? (to confide in – friend, teacher, nurse, counsellor, family member, nobody…).

14. Where would most girls / boys of your age would go if they thought they had a disease on their private parts (for diagnosis and treatment)? Probe: Why? What kind of help would they expect to get?

15. If a girl / boy your age thought they might have HIV, do you think they would have an HIV-test? Why? Why not?

16. If they found out that they had HIV, do you think they would tell their boyfriend(s)/girlfriend(s)? Who might tell (friend, brother, sister, parent, nobody…)?

17. What if it wasn't HIV, but another STD – Do you think their decision would still be the same? Is it easier to talk about STDs than it is about HIV? Why or why not.